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AMERICAN DYESTUFF REPORTER

VOLUME 8

1921

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Jan. 3, 1921
Vol. VIII, No. 1

In 2 Sections
Section 1



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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

In Two Sections—Section One

Vol. 8

New York, January 3, 1921

No. 1

A "HORSE" ON THE KARTEL

House of Lords Completes Huge Joke on Rhine Combine, but U. S. Senate Still Lacks Sense of Humor

WHILE the United State Senate sleeps and the German dye barons keep extremely active, the British legislative mill continues to grind to good purpose, as evidenced by the latest news that the House of Lords has passed the Dyestuffs Import Regulation Act, thereby ending all doubts—if there ever were any—as to England's attitude toward her own industries and the possibility of more war in the next generation. There has been much talk of the English lately in these pages, but since England is now furnishing the livest news to dye makers and users in either country she must continue to command the floor until something happens over here. And the news which comes just before the old year gives place to the new is such good news and of so much importance that it should be given far more space than it will ever receive from the daily press.

Scarcely a ripple is produced here by the information that England has taken an action which it is the vital concern of every citizen of the United States to

see duplicated. The answer is that its significance is not apparent to any but a very few editors, nor to any but a very few, comparatively speaking, of the general public. If England were suddenly to solve the Irish question the news would make the circuit of the globe within a day and would be on everyone's lips in no time. Yet that news, without in the least minimizing its importance, would signify no deeper or more lasting effects on the welfare and peace of the English people as a whole than does the news that England is to be independent of all outsiders for coal-tar chemical products, and is to have all in the way of preparedness and scientific advancement that goes with such independence. The news value of an event is gauged by the number of people likely to be interested or affected. In the case of the action of the House of Lords few are interested, because few understand what England has just done or how it applies to themselves. And not many editors know how many

people would be affected by similar action here.

But there is plenty of stir in the dye industry, and in the textile, paper, leather, paint, ink, perfume, flavoring extract, photographic, pharmaceutical and a host of other industries, both here and in England. There is not much stir among the English public; for, despite the fact that the whole subject has been well aired in the London *Times* and other papers, most of the English do not know what has been done for them, any more than Americans know what is going to be done for them in this matter. A large majority, it is safe to say, merely rejoice from the vaguely patriotic feeling that it is rather a good notion to make one's own colors.

There should be a stir in the Senate over this news, but there isn't—not yet. Whatever may be going on is being done in private, and no doubt Messrs. Moses, Thomas, King & Co. are doing no little thinking just about now. The subject of their meditations is that this is going to make their task of further delaying the Dye bill much harder, and the task of the majority favoring it much easier—if the latter seize upon their advantage.

Will they do this? It seems like a slight upon their political knowledge to doubt it, yet the inner workings of the Senate are as much a mystery to us as to anyone else. Results are all we have to go by, and the results so far show that it is not majority opposition but technicalities which the supporters of the bill have to contend with. Results

also show that the Dye bill, which has kept its place on the Senate calendar, has already been reached several times in the course of regular business, but that each time some means has been found of postponing discussion, and it may be that its friends are biding their time before "springing something" momentous during the remainder of the present session. Nothing else, at any rate, can account for the lack of action.

Unless there is some very good reason having to do with jeopardizing the chances of the measure, right now is the psychological time. The English action should furnish the Dye bill's proponents with a powerful lever which, added to the multitude of other reasons which they can bring to bear, ought to enable them to ride over the obstructionists pell-mell. We can conceive of no possible "inside" reason why a determined effort should not be made in behalf of the Dye bill the very next time it comes before the Senate. Let its supporters stand out for their rights boldly, call for the application of the closure rule to prevent another filibuster, and force the measure through. It will be immediately signed by President Wilson; of that you may be sure. Let it go alone, and not as a "rider" to any emergency tariff legislation or other bill whatever. It is quite strong enough to stand on its own merits; its unique qualities should be publicly demonstrated in the most open manner, and, moreover, it stands a good chance of being relegated to the scrap heap if it is tacked on to a measure which the President happens not to approve.

In his message to Congress President Wilson declared his belief that further increases in tariff duties are at present unnecessary, and with him, for a wonder, Senator Penrose is in agreement. Yet in the same message the President specifically mentioned the need of immediate and effectual protection of the dye industry. This should surely be evidence enough that he does not regard it as a tariff question at all; yet Senator Penrose persists in including it when he voices his opinion of all "pop-gun" tariff legislation, and only recently

he again gave out that he wants the Dye bill taken up with the "other tariff measures" later on. There is one thing certain, at least, and that is that if Senator Penrose blocks action on the Dye bill until after peace with Germany has been declared, the industry has a right to demand of him that he again introduce a resolution continuing the present protection until the question can be decided.

Senator Knox made the same mistake, although doubtless it was a mere slip, in an interview which he gave to the press on Christmas day in which he said:

"There are two grounds upon which I am advocating a high tariff against German dyestuffs. Upon the principle of building up a new industry in this country, and conserving the country's resources, I would favor it. The possibilities of the dye industry are enormous. Conservative estimates show that \$1,000,000,000 is wasted annually in the gases which flow into the air

from our coke ovens. In Germany not a cubic foot of that gas is wasted; it is all utilized in by-products from which dyes, drugs and other chemicals are produced. It is folly for us to endure that great waste.

"Once the dye industry is firmly established in the United States, beehive ovens will be supplanted by by-product ovens and the \$1,000,000,000 which is lost each year will be conserved for the use of the human family.

"But there is a reason for building up the dye industry in this country which transcends the desire to establish a new industry. It is the national defense. The World War developed poisonous gases as a new and vital instrument of modern warfare. Ammunition dumps captured during the last drive of the Allied armies showed that fully 50 per cent of the shells, instead of containing explosives, as practically all shells did at the beginning of the war, were loaded with poisonous gases. The Germans used gas with deadly effect against us.

"These gases are manufactured in dye plants, and it was to counteract the use of gas as a weapon that the industry sprang up in this country. Now, if we permit it to languish, obviously we neglect a measure for the national defense that has proved highly important. Great Britain and France have recognized this fact and both have imposed an embargo against German dyes which will result in building up the industry in those countries. We should do the same.

"By developing the manufacture of dyes we not only provide new business activities and plants which give employment to many people, but at the same time we adopt measures for the national defense which in the event of another war in the future would be of the most vital importance. Why should we go ahead building battleships and overlook a phase of the national defense which has been demonstrated to be of such importance?

"The duty of Congress is very plain, in my opinion. I propose to use my efforts toward the establishing of this new industry and firmly entrenching it here, because I believe it is the part of wisdom to do so."

So say we all, Senator. We believe you were misquoted when you spoke of the "tariff" which is about to be placed on dye imports, and we trust you will not fail to make it plain to your colleagues that the laws of England and France are not directed specifically against Germany but against *all* dye manufacturing countries—which means the United States as well as the rest. As the largest manufacturer of dyestuffs of us all, Germany as a whole, of course, will feel the effect of the decrees more than anyone else; but the point to be emphasized is that this business of building dye industries is virtually an epidemic among the powers, and thus far the United States alone has escaped, probably due to the antitoxin administered by Dr. Thomas. We feel sure you understand the situation perfectly and will do your utmost, as you have in the past, to place the United States where she belongs among the na-

tions of the world. Without a full repertoire of coal-tar chemical industries she can never assume that place.

The Dye bill is not designed to smite Germany but to protect the United States against hopeless inferiority in the event of having to defend herself again. England has stolen a march on us and can now afford to laugh at the former menace of the German dye barons. In fact, to revive an expression of days gone by, no doubt familiar to you, one might say that England, by her action in providing for the licensing of dye imports, has a "horse" on the kartel.

No one knows better than members of the latter organization just what the action of the English means to them. They would gladly have prevented it if they could, but they also knew that efforts to thwart the passage of such legislation in England would be hopeless.

They have better hope of succeeding here, where Senator Thomas begs us not to discriminate against Germany; not to make it any harder for her than we have already.

There is little danger of that, Senator. If we can save our own dye industry intact with the licensing law we shall be doing very well indeed, and Germany will not lack markets elsewhere for her products.

Carry the message of how England engineered a "horse" on the kartel, and when it is once clearly understood just why England did this and why we ought to emulate her without delay, then invoke the closure rule and dispose of this matter in the only way to dispose of it.

INDIA'S INDIGO PROSPECTS FOR NEXT SEASON

The Indian Department of Statistics issues the following report:

The total area sown is estimated at 181,400 acres, which is 13 per cent below the revised estimate at the corresponding date of last year. As compared with the final estimate of last year (233,800 acres), the present estimate shows a decrease of 22 per cent.

The total yield of dye (excluding that for Bombay and Sind, for which no estimate is yet available this year) is estimated at 24,600 cwts., as against 25,700 cwts., estimated at this time last year, or a decrease of 4 per cent. As compared with the final estimate of last year (35,700 cwts., excluding Bombay and Sind), the present estimates shows a decrease of 31 per cent. Weather conditions at sowing time were not unfavorable, and the condition of the crop, on the whole, is reported to be fair. The average yield per acre is expected to be a little higher than that of last year.

Madras (54.3 per cent of the total area under indigo in British India).—The area sown up to September 1 is estimated at 59,000 acres, as against 65,300 acres estimated at the corresponding date last year, or a decrease of 10 per cent. The yield is estimated at about 12,000 cwts., as against 10,000 cwts. estimated at this time last year.

United Provinces (20 per cent).—The area sown is estimated at 45,000 acres, compared with 47,200 acres reported at this time last year, or a decrease of 5 per cent. On the basis of the reports received from factories, the yield is estimated at 4,100 cwts. against 4,300 cwts., the corresponding estimate of last year.

Bihar and Orissa (14.7 per cent).—The area sown is estimated at 44,400 acres, as against 57,100 acres reported in the corresponding forecast of last year, or a decrease of 22 per cent. In the important districts of North Bihar there has been a further reduction in area under indigo this year, attributed mainly to the cultivation of sugar cane and grain crops, which yield larger profits at present. According to the estimates the total yield for the province works out to 5,000 cwts., as against 7,400 cwts. estimated at this time last year, or a decrease of 32 per cent.

Punjab (9.3 per cent).—The area at the end of September is estimated at 16,200 acres, as compared with 19,300 acres estimated in the corresponding forecast of last year, showing a

decrease of 16 per cent. The season has been unfavorable and the condition of the crop is reported to be average or below average. The yield is estimated at 2,800 cwts., which is 10 per cent below the corresponding estimate of last year.

Bengal (1 per cent).—The area sown is estimated at 9,500 acres, as against 11,700 acres last year. The outturn is estimated at 700 cwts., against 900 cwts. last year.

Bombay and Sind (0.6 per cent).—The area sown is reported to be 7,300 acres (5,200 acres being in the Khairpur State), which is 6 per cent below the corresponding area (revised) of last year. The crop is confined mainly to Sind, where it is in fairly good condition so far; but the recent sudden fall of river is likely to affect the outturn. The crop is reported to be too young to afford an estimate of the yield at present.

AMERICAN DYESTUFF REPORTER

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Pointed solely toward the welfare and growth
 of the American Dyestuff Industry. Unbiased
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In Two Sections—Section One

A. P. HOWES, President
 LAURANCE T. CLARK, Editor

RESOLUTIONS

No one, it is likely—even the most sanguine of the German lobbyists in Washington or the most aggressive champions of the textile interests of Colorado and Utah—would have believed at this time last year that 1921 would be ushered in without the fate of the Dye bill having been decided upon by the United States Senate, which has had the measure in its keeping a matter of fifteen months. At that time things were very unsettled; the Peace treaty, occupying the earnest attention of our Solons at frequent intervals, was expected to be disposed of by many, and the Penrose "pacifier" in the form of a resolution safeguarding the industry in that event, had just been put through. It was known, however, that the Dye bill was long past due, that it was an emergency measure as truly as anything else claiming that distinction, that a determined effort was to be made to get it up and passed; and while there was the possibility of a filibuster being started against it, it did not seem reasonable to suppose that a delay of one solid year could be added to the then really disgraceful record of inactivity.

In fact, looking upon the Senate as we were all taught to do in school, the chances of an entire year being wasted seemed almost too wildly improbable for consideration. Yet it is just this most improbable thing which has come to pass.

Gentlemen of the dye making and

dye consuming industries, the year just ended, which has contained a fairish number of important events, has been nothing but an empty blank—the superlative of naught—so far as a certain matter most important to all of you is concerned, and the Senate might well paraphrase the late Izaak Walton in publishing a little volume descriptive of its tactics with the Dye bill under the title, "The Compleat Dangler"—or even, it might be suggested by some, "The Compleat Strangler."

If we were—as indeed we are—going to refer to 1920's status with relation to the Dye bill in the slang of the moment, we should be obliged to designate it as a "cluck."

Those who prefer a more elegant form of expression may think of it as a mere misstep in the march of Time.

The golfer would say that the Dye bill had been stymied, the yachtsman that it was in stays, the motorist that it was stalled, the six-day bicyclist that it was boxed, the tennis player that it was unable to break through, the trap shooter that it was jammed and the locomotive engineer that it was on a dead center, while the chemist might think of it as in a solution from which it refuses to be precipitated, and so on, *ad nauseam*.

When cooling won't bring about precipitation, sometimes the addition of another substance will. In the present instance, all that now is needed is noise, and plenty of it. In the crude dialect of us native North Americans, you won't get quick action unless you holler for it.

This is the accepted time for the formulation of resolutions for the coming year, and again we say to you that whether you are dye manufacturer, dye consumer, butcher, baker or candlestick maker, you can't make any better resolution than that you will relentlessly and remorselessly persecute your Senator with letters; missives, communications, petitions, manifestos and ultimatums weekly, biweekly or even daily until the Dye bill is taken up and passed. And if you break every other resolution on your list, please

keep that one. You will never regret it, and what is more, the harder you and your neighbors wage the campaign, the shorter it will be and the less trouble you will be put to.

For its own part, The REPORTER offers as its principal resolution for 1921 the following:

Resolved: To continue with renewed vigor our championship of the rights of the American dye industry and the American dye consuming industries; to hammer away without intermission in our advocacy of the licensing system of protection, and to maintain in every possible manner a steady agitation of this subject until the Dye bill is enacted into law.

THE NEW SILK CONTRACTS

Although created but seven months ago, the Bureau of Contracts of the Silk Association of America has accomplished a notable work in improving relations between buyer and seller in its own industry,

and by the force of its example and the published record of its excellent solution of the cancellation danger has furnished a powerful stimulus to others desiring to indulge in a sort of business housecleaning.

The function of the bureau is not, as some have supposed, to organize the manufacturers into an aggressive league bent on exacting the full pound of flesh from the retail merchants, but to safeguard the rights and interests of both manufacturer and retailer, which is the only sound basis for lasting peace. As pointed out in another issue of The REPORTER, it aims to remove the premium upon dishonesty in cancelling contracts, thereby removing the need for honest buyers to emulate their scheming brethren or get left. It wields the mighty and wholly just bludgeon of publicity, which never descends upon the head of the straightforward business man *anxious* to co-operate for the good of the industry in general,

but which effectually deters a large percentage of "sharp" individuals from even attempting to try their luck at slipping out of an agreement supposedly made in good faith. Therein lies the great good of the bureau, since prevention is better than cure any day, and when the operation of its plans becomes more generally understood we predict that it will have little work to do in the line of arbitrating cancellation cases.

After some months of effort toward a revision and amplification of the existing code of rules, the bureau finally submitted a new version to the members of the Silk Association and later to the board of managers, for criticism and correction. The resulting code contains the following, which tells the story:

"Rule 4—Seller shall not be liable because of later or non-delivery due to strikes, fires or other causes beyond his control. If by reason of any of the above causes the production of the seller shall be partially or wholly curtailed, then the deliveries may be either proportionately or wholly suspended as the case may be, and resumed upon the removal of the difficulty and continued until the entire quantity purchased hereunder has been delivered; provided that if such delay in delivery of any portion shall be for more than thirty days the aforesaid undelivered portion may be cancelled by the buyer, who shall, when requested by the seller, state in writing whether he will elect to cancel. If the total period of delay in

delivery exceeds ninety days seller shall have the right to cancel such undelivered portion."

There is a good, fair, workable agreement, which is to be made a part of all contracts in future signed by members of the Silk Association. It protects both parties, and if entered upon with understanding and the determination to abide by it, should be the means of practically solving the cancellation evil so far as the broad silk industry is concerned.

It is reported that a large number of cases which have come before the bureau have been settled out of court—which is in itself a happy sign. In instances where there was an evident intent on the part of the buyer to evade a contract because of altered business conditions, he has been warned by the bureau and the manufacturer advised to push his claim. It must not be supposed that the bureau has always sided with the manufacturer. In some cases the latter has been found at fault by the bureau and ruled against, and where it was apparent that the buyer was financially unable to live up to the terms of his contract, the seller has been advised to make some sort of a cash settlement involving the difference between the original price named and the current market price, instead of attempting to load the consumer up with goods which he would be unable to negotiate.

Under such regulation as this, the cancellation evil in the silk industry should rapidly diminish—as indeed it already has—and others wishing to effect a similar reform could not do better than to consult with members of the bureau, who will be glad to tell more of the principles laid down in the new contracts.

The W. H. Ashley Silk Corporation, of Hackettstown, Pa., has been incorporated with a capital of \$125,000. The incorporators are Thomas Ashley, James C. Ashley and William Ashley.

CATALYSTS IN BLEACHING AND DYEING

There is a tendency for modern industries to become more and more dependent on trifles. Steels having widely different physical properties are often very similar in composition and only differ from each other as regards the small amounts of carbon, phosphorous nickel, chromium or tungsten that they may contain. The hydrogenation of oils for use in margarine and candle manufacture is dependent on the catalytic action of nickel, whereas the production of sulphuric acid depends on the union that finely divided platinum will effect between sulphur dioxide and oxygen. Catalysts are becoming important necessities in many industries.

In the textile industries, particularly in bleaching and dyeing, catalytic actions are widely used. This is largely because of the need for avoiding energetic chemical reactions in the treatment of all fibers. Tendering is a source of trouble to all textile workers, and in general catalysts allow of reactions to be carried out under conditions more moderate than those which are usually necessary. Thus, in the discharge of para-red and other ice colors, tin-salts were at one time much used. The discharge, however, was often accompanied by very serious tendering. When it was later discovered that hydrosulphite preparations in the presence of a catalyst could effect the discharge under a moderate steaming, this alkaline non-tendering process

quickly displaced that in which tin-salts were used.

At an early stage in the treatment of fabrics an application of catalysis is used. Before cloth can be dyed it must be freed from all size, starch and other dressing materials. This could be done by means of acids and alkalies, but tendering might possibly ensue. To avoid this the cloth is now usually treated with diastase.

When barley is allowed to germinate, an enzyme called diastase is formed. At a suitable stage the germination is stopped by heating the grain to a suitable temperature. After grinding and macerating the product with water an aqueous extract is produced. This extract contains the enzyme diastase and so receives its commercial name *diastase*.

If diastase be allowed to act on starch materials in a neutral medium, the starch is rendered soluble and is finally saccharified, so that fabrics steeped in diastase overnight can be readily cleansed by a boiling out in water. The action of the diastase is purely catalytic. Since the presence of quite small amounts of acid or alkali destroy the enzyme, the necessary conditions of the treatment prevent any possibility of the cloth being tendered.

It is a well-known fact that fabrics dyed with sulphur colors—particularly sulphur blacks—are liable to become tender during storage. This has been shown to be due to slow aerial oxidation and the consequent formation of

sulphuric acid. One suitable remedy is to pad the dyed cloth with an alkaline filling. But the danger may be largely avoided if care be taken to insure that no substance be present which will aid formation of the acid.

Iron and copper have a considerable influence on the rate at which sulphur-dyed materials tender. Their effect is purely catalytic and is to quicken the oxidation of the sulphur. Consequently the useful "after-treatment" of sulphur-dyed cloth with copper sulphate must be avoided in the case of sulphur blacks.

Aniline black dyeing is very largely carried out on cotton goods and is particularly useful for piece dyeing and printing. The color is exceptionally fast. But all the processes at present in use depend on catalysts. The transformation of aniline to aniline black is essentially one of oxidation in an acid medium. Obviously it is risky procedure to carry out an acid reaction on cotton fabrics. So that it becomes necessary to obtain methods that allow the black to be formed under conditions that are as mild as possible. This is accomplished by employing various salts whose function is to accelerate the transference of the oxygen of the oxidizer used (often soda chlorate) to the aniline.

The name of the process usually indicates the catalyst used. Thus there are copper, vanadium and prussiate aniline blacks. In Green's process, use is made of paraphenylene diamine, and this catalyst is so efficient that it will allow of the aniline to be oxidized by means of air alone.

In discharging para-red and similar colors the use of sodium-hydrosulphite is both desirable and possible. Printing pastes made with this discharging agent, however, are somewhat unstable and are consequently difficult to use. In 1904 the "Badische Anilin und Soda-Fabrik" discovered that sodium-hydrosulphite forms stable sulphonylic acid compounds with formaldehyde and that these on steaming have the reducing properties that are possessed by hydrosulphites alone. These newer com-

pounds were rapidly used in printing; but while some ice colors were very satisfactorily discharged, others apparently withstood the reducing action. Para-red could be discharged, but not a-naphthylamine claret.

To cover the poorness of the discharges, zinc oxide was incorporated with the formaldehyde sulphonylic acid compounds. It was then discovered that the zinc also acted catalytically in aiding the discharge. In the presence of zinc oxide indigo could be discharged, while without it no decomposition of the color took place at all. This fact led to a research for other catalysts. Baumann and Thescar, of the Manufaktur Zundel, Moscow, introduced the catalytic use of iron. Later C. Sunder suggested the use of anthraquinone and this substance is now widely used. Generally some 1-3 per cent of anthraquinone on the weight of formaldehyde sulphonylic acid is used.

"Methylene Blue" and "Induline Scarlet" are two dyes among many that also aid in the discharge.

So that, by use of catalysts, discharging by means of hydrosulphites has become a simple and widely used process. It can be used for all ice colors.

In some instances catalytic actions are disadvantageous. Hydrogen peroxide is very susceptible to catalysts. If a piece of iron or copper be placed in "hydrogen peroxide solution" there is soon a copious effervescence, showing a loss of oxygen. Most peroxides and perborates are similarly unstable in the presence of small amounts of foreign bodies. For this reason, therefore, when hydrogen-peroxide is used for bleaching care must be taken to see that the apparatus is free from metallic catalysts. Otherwise the process rapidly loses in efficiency.

When cloth is boiled in kiers with lime and other alkalis there is always a chance of oxycellulose being formed. In such cases the lime catalytically aids the aerial oxidation of the cellulose. The parts of the cloth so affected give rise to much trouble in the subsequent dyeing operations. If dyeing be carried out with direct colors, then white

stains result, while dark patches sometimes, though not always, occur if the cloth be dyed with basic dyes.

The importance of catalysts cannot be too strongly emphasized. It indicates that in any treatment of fabrics cleanliness is essential, for catalysts may be as harmful as they are useful. A catalyst, like fire, must always be under control. — *Posselt's Textile Journal*.

SWISS DYE INDUSTRY FEELS COMPETITION OF PAST TWO YEARS

A review published by the Basle Chamber of Commerce states that in 1919 the Basle chemical works were extremely busy in supplying the demand from northern France, Belgium and Alsace. The color works were also busy during the whole year, and got behind in deliveries owing to a strike in August. Although the number of dyes offered at present does not anything like reach the variety brought on the market before the war, their number is fairly numerous.

The sale of artificial indigo suffered very much owing to the general trade depression immediately following the Armistice, during which time prices fell. It was then expected that competitors would put more goods on the market, which, however, did not happen, and in the spring a reaction took place. The manufacture of indigo was hampered during the year by all kinds of difficulties. Whereas formerly it was difficult to procure sufficient acetic acid it became increasingly difficult to procure aniline oil, the price of which had considerably risen.

In spite of these difficulties, however, manufacturers were able to export twice as much as during the previous year, although a considerable competition had set in on the part of British and American competitors who were able to increase their exports. Prices were about the same as in the previous year, but towards the end of the year they had to be raised owing to the enhanced cost of raw material and labor.

Manufacturers of extracts received sufficient orders and were able to procure their raw material in sufficient quantities. Buckthorn berries were procurable in larger quantities, and were of good quality. Tanneries were able to procure their usual raw materials, and only exceptionally were they obliged to use sumac extract and myrabolan extracts. Gallic extracts were in demand, and generally a good trade was done in tannin extracts.

The year 1919 proved to be a satisfactory year for the chemical industry in general. The Armistice concluded at the end of 1918 altered the market possibilities, to which the industry had to adapt itself. Orders for pharmaceutical chemical goods for the armies in the field ceased, but during the beginning of the year orders arrived from Eastern European countries, the stocks of which had entirely disappeared. The unprecedented drop in the exchange of the newly established countries, and the fact that German competition in the chemical industries set in again proved to be a great drawback in developing trade in the East. The demand for chemical pharmaceutical goods in the world market gradually decreased owing to severe competition in America

and the Western countries, so that prices gradually fell. The low rate of exchange in Germany made business extremely difficult. Chemical works had accumulated considerable stocks, which had to compete with stocks held by the various armies which were being sold out. The price of alkaloids kept fairly high. The difficulties in procuring raw material have to an appreciable extent decreased. Raw material sold out of army stocks could be bought fairly cheaply.

With regard to the year 1920 competition is very severe, and times are difficult for Switzerland, as she is dependent on foreign countries for the majority of her raw materials, including coal, and also owing to the ever-increasing cost of production.

NORWEGIAN TEXTILE INDUSTRY, TOO, HAS ITS TROUBLES

Mr. Aulie, secretary of the Norwegian Worsted Factories' Association, stated during a conference with one of the representatives of "Verdens Gang," that prospects for the Norwegian textile industry are unfavorable. Several of the factories are obliged to limit production considerably.

This statement was confirmed by the directors of the Norwegian Tricot Manufacturers' Association who alleges that in the eastern district at least half of the machines in the cotton-tricot factories are not in operation. The situation is somewhat better in regard to the worsted-tricot mills, although difficulties are expected after January 1.

Reasons for this unsettled condition are to be found in the overstocked world market and in the enormous import of ready-made articles. While in 1914, 86,645 kilos (kilo = 2.2 pounds) of worsted-tricot articles were imported, 430,839 kilos were imported in 1919. During the seven first months of 1920 the import was 351,688 kilos.

The import of cotton goods is still

larger: In 1914, 87,342 kilos; 1919, 726,259 kilos; and in the first seven months of 1920, 475,765 kilos. There is scarcely any market for stockings, as business is completely stocked by foreign makes.

Mr. Aulie was asked whether there would soon be a market for women's cheap golf jackets in Norway. He replied, in substance, that golf jackets made by Norwegian factories are much cheaper than foreign made coats. Forty crowns (Norwegian crown = \$0.268 at par of exchange) for a golf jacket is not a high price. The most expensive ones, made in Norway, cost 52 and 53 crowns, and are made of soft worsted. Norwegian wool is too coarse and foreign yarn is therefore being used for the finer goods. Foreign wool has dropped in price relatively more than the Norwegian. From 35 to 40 per cent of the Norwegian wool is lost in washing. The price at present is between 4 and 5 crowns a kilo (kilo = 2.2 pounds).

CLEANING AND BLEACHING LINEN YARN

Linen yarn as it comes from the mill is a complex and by no means lasting fabric if subjected to damp or exposure. The reason for this is that the cellulose fibers are impregnated with and have adhering to them much unstable matter—the pectins, which are in a marked degree suitable as a living medium for the organisms of decay. Cellulose in itself, if unchanged, is comparatively stable and rotproof, but alongside of decaying matter is soon acted on and rendered liable to decomposition. It may be premised that the nearer to pure cellulose the fabric is the more stable will be the yarn or cloth.

Besides this, the cleaner the fibers are the better the cloth will—for aeroplane use, for the sake of example—absorb the varnish. The amount of foreign matter, the result of scutching, retting, etc., which linen yarn contains is remarkable.

In a really rough, heavy, dry-spun thread it is possible to extract over 50 per cent of pectic material from the yarn.

So long as there is a shade of yellow in the cloth so long is foreign matter present. It must be remembered that the most highly finished yarns have a considerable amount of color left in them—disguised, however, by a shading of blue or violet.

THE ALKALI BOIL

The boil in alkali removes much of the extraneous coloring matter and removes what is a natural resist or protection which prevents the oxidizing action of the bleach reaching the interior of the fibers and adhering cells.

Simple boiling removes much objectionable matter, but it must be remembered that what is left is even more liable to fermentation than in its natural state. Many of the insoluble pectins are by alkali rendered soluble, and are in that condition extremely liable to fermentation. This is very marked in the process of bleaching. After the first boil, only a few hours are necessary in warm weather for fermentation to be set up.

The next process, treatment with bleaching solution, is interesting. Much of the less stable material is destroyed by oxidation, but at the same time there is a combination of many of the pectins with the lime and the formation of very stable lime compounds. One would almost think that these lime soaps act to some extent as antiseptics and as preservatives to the fibers. One thing is evident—they add weight and give a full, leathery feel. The next process, souring in weak vitriol, should decompose these lime salts, but in the writer's opinion it is questionable if this change takes place.

The sour in vitriol deposits the clinging and absorbed bleaching solution as sulphate of lime on the yarn. In this way much lime is forced into and on the fibers.

A LONG PROCESS

It must be remembered that many bleaches and sours go to form a full bleach. The finishing process consists in treating the yarn with a soap solution. Ammonia, sodium, and potassium soap are often jointly used. The result of this is the formation of a lime soap on the fiber, which certainly helps the physical character of the thread. Where strength, lightness and lasting qualities are of paramount importance it is doubtful if this is the best process, especially if a varnish is to be applied. For that, clean cellulose fibers are essential.

NO LIME

For aeroplane linen the writer thinks nothing but a bleach entirely free from lime should be used, and the yarn should be brought to a full half-bleach, the process being continued in the cloth to a full white. No shading colors or soap should be used, the last sour being neutralized by alkali alone.

In this way an almost pure cellulose thread would be obtained, and if the white is an objection coloring of the dope would rectify that. A soda bleach is so easily made—is, in fact, a commercial process—that there should be little difficulty in meeting the specification. It is needless to remark on the process by which soda bleach is made, as every bleacher knows that an addition of **alkali to ordinary bleaching solution gives a deposit of lime and sodium hypochlorite.**—*Journal of the Textile Institute.*

Dye-a-Grams

Now that times are so slack in the mills, let the efficiency expert show us what good he is—

—O—

—For we know that when business was good he was an adept at minding everyone's business but his own.

—O—

Generally speaking, no man appears great to his contemporaries. The opposite is more often the case.

—O—

We are pleased to note the announcement of so many new types of dyes being put on the market—but we *would* like to know where th' Sam Hill are all the mills that are using these dyes!

—O—

We cannot comment on the last issue of The REPORTER owing to the fact that Mr. Burleson, P.G., has not yet delivered same.

—O—

If each of the people engaged in the dye industry would buy a suit of clothes or an overcoat or an outfit for the Missus, perhaps, then, they could sell some dyestuffs to the woolen mills!

—O—

First we were blessed with Profiteers; now it is Tightwads. One does not need to hire the Lick telescope to see why business is stagnant!

—O—

We would like to inquire, dear Ed., if the terms for advertisements are 2 per cent ten or net thirty days—or ninety days from the first of the following?

For some, the future is full of radiant hues; but for those who counted too strongly on the Roumanian order it is full of radiant "blues"!

G. E. T.

NOTES OF THE TRADE

The Transatlantic Chemical Corporation has discontinued its New York office and in the future will handle all business from its works offices at Linden, N. J. By combining the two offices, the company feels that it can serve its customers more advantageously and with greater expedition.

The London Board of Trade (Licensing Section) states that as from December 2, 1920, an open general license has been issued for the export of photographic chemicals containing not more than 20 per cent coal-tar derivatives.

At a recent meeting of the board of directors of the British Dyestuffs Corporation, Ltd., Sir William Alexander was appointed a director of the corporation. Sir William is managing director of Charles Tennant, Sons & Co., Ltd., and represents the Government on the board of British Cellulose and Chemical Manufacturing Company, Ltd.

The *Compagnie Francaise des Extraits Tinctoriaux et Tannans*, of Havre, which manufactures dyeing and tanning extracts from wood, states that in 1919 this French industry began to recover something of its pre-war activity. While the imports of raw material were on a smaller scale than formerly, this was due mainly to the insufficiency of transportation facilities. The Havre company imported about 1,000 tons of dyewoods, and about 4,000 tons of quebracho wood. As in many other industries, the unfavorable exchange situation proved a serious obstacle to imports for the United States.



AMERICAN DYESTUFF REPORTER

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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

New York, January 10, 1921

No. 2

THE GERMAN ATTITUDE

A Highly Illuminating Editorial from the "Bremer Nachrichten"
Which Speaks Volumes for What We May Expect in Future

AS the late Elbert Hubbard might say, were he getting out The REPORTER this week, here is a little something which all of our readers know, but which not all of them *know* they know. Sometimes a fact will percolate to a man's inner consciousness and lodge there in such an out-of-the-way corner that he is scarce aware he carries it around with him; sometimes, indeed, it may burrow so deep that it even fails to produce its own peculiar trade-marked series of mental reactions when a thought associated with the fact is introduced. In other words, it may miss its cue through very over-familiarity with the part.

Is Germany repentant? Does she raise her hands in holy horror at her past, and yearn to atone? Does she see what a ghastly tragedy she brought upon the world and feel that she was guilty of a greivous error—which she surely was—a tactical error? she thought she could "get away with it." Does she believe she brought her troubles upon herself and feel that she is

now receiving justice tempered with mercy—which she undoubtedly is?

She does not! She does not and we all know it, yet sometimes under the spell of her spokesmen we half entertain the notion that perhaps she is being abused, and that is why The REPORTER reprints in full an article from the German press which furnishes concrete evidence that Germany is being told to regard herself as the victim of depraved and brutal savages instead of being accorded more mercy than ever she would have been shown if she had started her little kultural conquest a few centuries earlier. In former times, she would by now have been dismembered and the Allies would be dividing up the remnants of a once proud Empire. Instead, all she is asked to do is to bring back what portable objects she stole from France and Belgium, and pay the expenses of the Allies on the installment plan—and she is being encouraged to get her manufactures going again and her world trade reorganized so that she can do this.

Yet the *Bremer Nachrichten*—which many will in future think of as the *Bremer Nicht-richtig*—a Bremen newspaper much read by Americans in Germany, printed on November 14 last a leading editorial under the heading. "An Appeal to Americans" in which this country is charged with responsibility for Germany's woes of the present, and is asked to intercede for her with the Entente, smash the Treaty of Versailles and see to it that the conditions imposed upon her are made less stringent!

"What we, a single newspaper, write is the true expression of the sentiments and convictions of our entire people," says this editorial. In the absence of definite proof of this assertion, the sportsmanlike thing to do, presumably, is to give the editor the benefit of the doubt and allow that it is.

It will be observed that the U-boat question is again brought to the fore, and judging from what this editor thinks, it is a wonder he does not call them the Ewe-boats—they're so innocent! Probably he would if the pun could have been fitted into the German language. ("G. E. T." please take note!). As it is, he upholds Germany's fancied right to tell us what we may and may not do outside of our own three-mile limit.

It appears from this highly illuminating document that "America is responsible for Germany's fall down from a proud height." This is likely largely true, and we are proud to agree, in view of the kind of pride which raised the German nation to its former eminence. But it also appears that the Allies (including Belgium, no doubt) planned and prepared for the Great War years in advance, and that the United States entered the war on a mere "pretence" so as to be able to take a dig at Germany, and further, that Germany "was attacked on all sides," was "hunted to death like a wounded stag," and that her intentions had all been peaceable up to the time of the war "which was forced upon her"! Shades of Baron Munchausen!

Again: "For the German people no better times are in view; their future

is dark." But not so dark as their immediate past, we venture to suggest to this editor, nor so dark as the ignorance of those who are being guided in their opinions by his newspaper.

We should like to quote more, but you shall read it all for yourself. Germany is not repentant, and, for the matter of that, who expected her to be repentant? Repentance means that the offender earnestly believes he would not repeat his offence if given another opportunity. Germany would gladly make hash of all the Allies to-morrow if she could. No, it is not like true repentance at all; it is not to be looked for in a country fed upon such nourishment as the example here given. When a circus lion kills his keeper, the lion does not feel repentance; he would do it again if he wanted to and had the chance. Nor is the lion killed, because he has a certain cash value to the circus people. He is put in a strong cage and closely watched to see that he does no more harm.

That is how we may regard the present situation of Germany and the Allies. Germany is not to be killed, but prevented from attaining a position where she can accomplish what her present attitude would indicate she would give much to do. That is why we need a peculiarly rigid form of protection for the dye industry here, and why the reproduction of this editorial should go far toward silencing those who have affected not to see anything but friendliness and repentance in Germany.

The Bremen editor declares he hopes his readers will send copies of this editorial to friends in America for general distribution. We are delighted that we are thus able to help him along. We feel that it *should* have a very wide distribution indeed, and we hope that the perusal of it will furnish a useful lesson to many who have realized in a general way what Germany's attitude toward us is to-day, but who have not as yet been privileged to see such concrete evidence as that which we here present.

When published, the editorial was translated and printed in English in an-

other newspaper, and through the kindness of friends a duly authenticated photostat copy is in the possession of The REPORTER. The article follows, grammar and all:

An Appeal to Americans!

(People of the United States, do speak a word of command!)

The last harvest has given to you Americans such a surplus of food-stuffs and raw materials, that you hardly know how to dispose of them, and there seems to have been some talk of destroying part of it in order to avoid the calamity of a sudden collapse of prices.

You can feed and cloth yourselves, and your children are in good cheer, which, from all our hearts, we do not begrudge them; they can hopefully look into the future.

Do look upon our poor people! Hundreds of thousands are going hungry and cold, and have no warm clothing to put on. Tuberculosis and General Debilitation are bringing a premature death to thousands of children and adults. The Entente plunders us and sucks the marrow out of our bones. The raw materials, so badly needed for our reconstruction and for the creation of values, to be used to liberate us from the gigantic burden put on us, are denied us. We do not possess the quantities of coal, necessary for the supply of our industries and fishing fleets, while France is flooded with an abundance of it, and even sells coal to us at enormous prices, and thus fattens herself on the results of our hard toil.

If at the end of this winter, which set in too early, Germany will not die of hunger, she must buy from and pay to foreign countries foodstuffs valued at about 30 thousand Millions of Marks. From what source is she to take this sum, being plundered out totally and compelled to pay 15 thousand Millions of Marks for the sustenance of the foreign armies of occupation. And in addition thereto the enormous burdens put on her by

the infamous Versailles Treaty of Peace!

For the German people no better times are in view; their future is dark.

We are excluded from all justice and from all hope for industrial improvement.

The insatiable and revengeful French will force on us payment of 250 thousand Millions of Marks of war expenses. Americans! Even for your large country, abundance as it has of all products of the soil, it would be difficult to carry such burdens. And now put before your eyes our impoverished people bleeding to death in a proportionally small country, which, under present circumstances has a surplus population of about 20 Millions of people, and which, against all right, and in a manner which is a mockery to the sovereign right of the people, will be or is to be robbed of its best parts of land. For Germany hell is to be prepared on earth.

Nobody should allow himself to be deceived by a lot of criminal parasites, who have gained fortunes in paper money by tricks of trade and who are now revelling. They will run to their ropes end; the pitcher goes so often to the well, that it comes home broken at last.

The reverse of the picture shows hundreds of thousands of people who are wearing the last raggy garments and have no money to purchase new clothing. Numerous men are wearing their old military uniforms, dividing them with their children. Soon also these garments will be worn out.

Nowhere can we see a change for the better. The claws of the Entente are dug into our flesh. Dark hopelessness is laming our limbs and spirits.

You may ask why all this is counted up and brought forth? It is done for the purpose to say to you Americans that you are guilty of all this misery and that therefore it is your duty to intervene, to bring the Entente back to her senses and to break to pieces the shameful Versailles Treaty.

May many German newspapers, as we do today, tell you the truth, and may many readers, who have connections in America, send this article to them for distribution.

Yes, you are guilty of our misery and of our fall down from a proud height!

You ask why?

It is easily answered: Not only have you supplied our enemies, who had planned this war, and who had prepared themselves for it long ago, with war materials of all kinds, making thereby good profits, but by entering yourselves into the war you have brought military defeat upon us,—upon a people famine stricken and attacked from all sides, a people that like a wounded deer, was hunted to death.

Without you joining our enemies we would have held our own in spite of our enemies superiority in num-

bers, and we would have obtained a peace, annihilating neither us nor anybody else. It was only a pretence that you entered into this war on account of the attack of our submarines on vessels flying your flag.

These vessels of yours were warned sufficiently. Nevertheless passenger steamers carried ammunitions for our enemies, who, but for your assistance, would long since have agreed to a rational peace. If you had been in our position, no doubt, you would have used still stronger action of self-defence.

It was the intention of your leaders to hinder our economical rise. For that purpose we were defamed in your eyes by villanous agitation and we were denounced as peace breakers again and again, until everybody had to believe it. Against these methods we were defenceless, but you must know that Germany since the years 1870/71 up to this world war which was forced upon her, has pursued the works of peace and that in this long period other nations have made numerous conquests by force.

The worst, however, which you have done to us, was your Presidents false game with the 14 points, which have now become notorious throughout the world.

These were downright dripping with „Reconciliation of Nations“, „Justice towards the Enemy“, „Sovereign rights of the people“, and they finally enticed us to confide ourselves to the Democratic government of the United States.

On the basis of Wilsons 14 points Germany signed the articles of armistice.

Today every German knows that Wilson, the representative of your country, has betrayed our people and our country. He and you had the power to check the greed of the Entente and to assist us in the preservation of our rights, guaranteed by the treaty inasmuch as in the Lansing Note of November 5, 1918, it was expressly said that the allied govern-

(Continued on page 12.)

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A. P. HOWES, President

LAURANCE T. CLARK, Editor

THE TARIFF COMMISSION AND CHEMICAL INDUSTRIES

When you have finished with the editorial from the *Bremer Nachrichten* contained in this issue—which you should not neglect—turn your attention to the preliminary statement dealing with the U. S. Tariff Commission's "Census of Dyes and Coal-Tar Chemicals, 1919," which follows it. Copies of the new Dye Census had not reached this office up to the time of going to press, but a fair idea of its scope and principal features may be gained from the outline given.

Publication of the Census, which was delayed this year, marks an event of importance to the dye industry; and were its worth to the country to be gauged by its labors in connection with this industry alone, the Tariff Commission had then amply demonstrated its right to existence. But it has gone much farther than this, has done much for the chemical industries of the country generally; for when the Ways and Means Committee of Congress held its hearings on chemicals, January 6, 7 and 8, in Washington it had at its disposal, for the first time in the history of tariff revision, comprehensive information regarding the complicated and extremely technical tariff problems presented by these industries.

This information was prepared by the Commission in the form of re-

ports known as "Tariff Information Surveys," each of which furnishes, without suggestion of tariff policy or rates of duty, the main facts and figures pertinent to tariff legislation. These surveys, unbiased by political or commercial influences, were of considerable assistance to Congress during the public hearings and should prove extremely valuable in the actual work of tariff revision.

Schedule A of the Tariff Act—Chemicals, Oils and Paints—consists of seventy paragraphs, many of which contain provisions for several different products. In some cases the Commission prepared a single survey to cover a whole paragraph in the Tariff Act, while in other cases, where a paragraph enumerates several unrelated articles, a separate survey was prepared for each article. In general, the survey follows a standardized form consisting of a description of the article; uses to which it is put; methods and processes of its manufacture; notable divergencies between American and foreign methods of production; the nature and source of its raw materials, and statistical matter concerning domestic production, imports and exports, prices, and costs of production—so far as they are obtainable—in the United States and in foreign countries. Competitive conditions between domestic and imported articles are discussed; and this feature is very important indeed, as can be readily appreciated in the case of industries in much the same plight as the dye industry. Attention is called to changes in the present Tariff Act such as will make the provisions clearer, more consistent, and capable of better administration. It is also pointed out that in some cases the legislative phraseology and classification are obsolete, and that there is urgent need for revision.

The hundred or more surveys of the chemical industries have been grouped into nineteen pamphlets, each of which has been published by the Ways and Means Committee.

These pamphlets, although following the numerical order of Schedule A, deal in general with related products; and since many of them would be interesting to REPORTER readers, a general outline of their contents, by number, will be given next week.

That the Tariff Commission has proved "worthy of its hire" has been shown beyond question, and by the manner in which the material of these surveys has been handled it has demonstrated anew its supreme fitness to take charge of the administration of the licensing system which will be inaugurated with the passage of the Dye bill. This is the only respect in which the Dye bill differs materially with the British Dyestuffs Import Regulation Act, and it is the one respect in which our own bill improves upon the British measure. The REPORTER believes that the textile interests of this country could not find themselves in better hands, and that by the appointment of the Tariff

Commission to take charge of the granting of licenses, the possible charges of "favoritism" and unfair competition which were anticipated if dye consumers were allowed to serve on the licensing board will be forestalled.

GERMAN DYE EXPERTS, ENGAGED BY DU PONT, ARE ADMITTED TO U. S. OVER HOLLAND'S PROTEST

After an ineffectual protest on the part of the Vice-Consul for the Netherlands Government in behalf of Germany, Dr. Otto Runger and Dr. Joseph Flachslander, two German dye experts who said they were graduates of the University of Munich and had been engaged by the Du Pont Company to further that organization's dye production, were last Wednesday released from custody by the Ellis Island authorities, who had detained them pending investigation of charges that they were bringing writ-

ten dye formulas into this country.

The charges were denied by both chemists and by Major George Sylvester, of the Du Pont Company, who appeared in their behalf. All later departed for Wilmington. The two chemists arrived the week before, and it was apparent that the German Government was loath to let them come here when protests as to the legality of their departure from Germany began to come in. All details as to passports, formulas, etc., were finally settled to the satisfaction of Ellis Island officials.

It is said that each will receive a salary in excess of \$25,000 a year from the Du Ponts, which may be taken as a fair indication that the latter have no thought of curtailing their dye program.

THE GERMAN ATTITUDE

(Continued from page 8.)

ments had consented to conclude peace with the German government on the basis of conditions which your President had promulgated in his address to Congress on January 8, 1918, and on the basis of the principles, which he had expressed in his later speeches.

The 14 points were cast away as lumber, and the people of Germany has been betrayed and oppressed in a most shameful manner.

The Lansing Note stated that we had to make good all damage done to the civil population of the allied countries, to which we consented. But now, besides this, enormous war costs are demanded of us, and valuable parts of German territory are either taken from us, or are administered and impoverished in such a manner that they can do nothing for us.

The colonies and the merchant vessels, both so needed by Germany craving for raw materials, are taken away from her. In German Upper Silesia the Poles are agitating. Its loss will ruin us economically. Belgium oppresses parts of German ter-

ritories in the same manner as France does with the Saar Territory. Our enemies dictate to Germany whatever they please; our people become enslaved and must sign their own death warrant.

The Plebiscite in Alsace-Lorraine, which we demanded, was refused.

Moreover, does anyone of you doubt that Alsace, with its many German cities is German?

Read history! It was not we that annexed it, but France did, the same France that so often laid our country waste. Numerous other encroachments of our adversaries could be counted up. We have been allured into unspeakable misery by Mr. Wilson's 14 points.

People of the United States! Do speak a word of Command! so that History may not call you the Hangman's assistant of the German people.

The way is clear; Wilson, deserted by fortune, has disappeared from the stage. Whatever wrong he has done to us, you must make it good. The League of Nations, which debars Germany, and which you oppose, must either be converted by you into a real League of Justice, or it must be replaced by a new League altogether.

What is becoming of general Demobilization? Is only Germany to be made powerless and every other nation to be allowed to arm self unlimitedly, so as to be able to pounce her upon us at pleasure?

And are our people, squeezed out like lemons by paying the exorbitant high costs of the armies of occupation, also to pay the greater part of the costs of the French army?

Will you further tolerate the Black disgrace in the occupied German districts, where murder and rape of innocent women and children signify French Culture? Do your hearts not ache with pain considering the sufferings, which your entrance into the war and the breaking down of Wilson's 14 points has brought upon us.

The hollow-eyed faces and the emaciated little arms of many thousands of starving German children are directed toward you.

From Bremen, whose merchants and ship-owners have had friendly and business relations with you for many decennials we say to you:

Assist us in our awful distress and free us from the claws of greed and mad hatred of an enemy, long ago physically defective!

With the destruction of our economy, otherwise not to be prevented, the funeral of Europe and a general collapse will begin which will draw also you into the whirlpool of destruction.

What we, a single newspaper, write is the true expression of the sentiments and convictions of our entire people.

People of the United States! Wake up from your lethargy and pay your debt to Germany!

Dictate your Peace to Europe!

Let 14 torches of Justice enlighten the world as a sign that your better Spirit has awakened.

People of the United States!

Do speak a Word of Command!

TARIFF COMMISSION'S NEW DYE CENSUS READY FOR DISTRIBUTION

U. S. Industry Makes Encouraging Gains but Is Not Ready for Po- tential German Competition

Marked progress in the development of the American dye industry is shown in the report just issued by the United States Tariff Commission on the Census of Dyes and Coal Tar Chemicals, 1919. The production of the various classes of dyes during 1919 was equal to, or in excess of our pre-war imports, with the exception of vat dyes other than indigo. The manufacture of these vat dyes has required the highest technical skill, long research and a large investment of capital, and much progress was made in their manufacture in 1919. The domestic production of indigo, which exceeded the 1914 imports, the report says, is one of the notable achievements in the production of dyes during 1919.

Indigo ranks second in consumption in the United States, and is first in the world consumption, on account of its large use in China.

Although the average price per pound of dyes during the year 1919 was the same as that for 1918, the consumer received better value for his money, as the dyes produced during 1919 were of a higher quality and in many instances were of a faster type than the dyes available during the previous year.

The total production of dyes during 1919 was over 63,000,000 pounds—an increase of 8 per cent in quantity over 1918, and 38 per cent in excess of the pre-war imports. An analysis of the figures for 1919 shows many instances of a decrease in those dyes which are relatively easy to make, an increase in the dyes of better quality, and the appearance of many new dyes during the year. The domestic dye industry has been particularly successful in the production of those dyes for which there exists a large and constant demand.

The output of certain dyes has been developed to a point beyond the domestic consumption and large quantities of these have been exported, particularly to Japan and China. In estimating the significance of this achievement in the exportation of dyes, it should be remembered that little competition was met in foreign countries from German dyes. It should also be pointed out that any deductions as to the competitive strength of the domestic industry which are based on exports of dyes do not consider the fact that during 1919 the domestic production of vat and

alizarin dyes was less than the requirements of this country.

A new feature of the report for 1919 is the classification of dyes according to their application on the fiber. This grouping should be of particular value to the consumer who is directly concerned with the application of dyes on various fibers.

The imports of individual dyes during the fiscal year 1920 is published as the result of a special tabulation. The total imports were about 3,500,000 pounds.

There is no question that, with the possible exception of anthracene, adequate supplies of fundamental raw materials are now available from domestic sources for the future growth and expansion of this industry. During 1919 marked progress was made toward securing adequate supplies of anthracene, for the important class of vat and alizarin dyes. It may be roughly estimated that the 1919 output of pure anthracene was about one-fifth of that required to supply American needs. Indications point to the solution of the anthracene problem during 1920, either by increased output from coal-tar distillers or by the development of a synthetic process for making anthraquinone, the most important intermediate derived from anthracene. It may be predicted that the 1920 production figures, which the Commission is now preparing to collect, will show a large commercial output of intermediates and vat and alizarin dyes which depend upon anthracene and anthraquinone. The solution of this problem will mean much to the future development of a well-rounded and permanent dye industry in this country.

Although there was an apparent decrease in the total production of intermediates during 1919 this is due to the lessened demand for those intermediates required in the manufacture of explosives and for those dyes used for military purposes. Of considerable importance was the appearance of about seventy-six intermediates which had not previously been made in this country, and a substantial increase in the production of certain intermediates

which are needed for dyes of higher quality. The report also shows a list of intermediates used in the development and printing of dyes showing the trade name under which they were formerly sold by German firms and giving their chemical composition. In many cases these intermediates were charged to the consumer at a price greatly in excess of the market price if the intermediates had been sold under their true chemical name. It is hoped that the publication of this information will enable American consumers to purchase these products under their true names at more reasonable prices, and will also aid American intermediate makers to supply those not yet made in the United States.

In discussing the development of the dye industry in Germany the report shows the monthly stocks of dyes reserved from February to October, 1920, by the German manufacturers for optional purchases of the Allied and Associated Governments under the terms of the peace treaty. These figures indicate that the rate of production in Germany since July has been about one-third the pre-war output.

Copies of the report, "Census of Dyes and Coal-Tar Chemicals, 1919, Tariff Information Series No. 22," may be obtained for 20 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C.

SULPHUR BLACK ON HOSIERY

A process for dyeing sulphur black on hosiery has recently been patented, which is especially designed to increase the brilliancy of the shade. The inventor states that in the ordinary process of dyeing goods of this kind, the material is first dyed, subjected to a washing, and then to a finishing or a softening bath.

In the new process the object is to accomplish a particularly brilliant black, and a finished product in which the softening effect is intensified. This softening bath usually consists of soluble oils or oil emulsions, and by actual practice it has that the introduction of magnesium sulphate to this bath will

so affect the sulphur black that the result is a more brilliant and intense black, while the fabric is rendered very materially softer than when the magnesium sulphate is not used. It is further claimed that the use of magnesium sulphate in proportions of from one to ten per cent will produce very satisfactory results, and that an excessive proportion of magnesium sulphate has not produced unsatisfactory results; and the introduction of magnesium sulphate in any appreciable quantity, into the softening bath commonly used in dyeing sulphur black, will materially increase the brilliancy of the black in the product.

U. S. DYE PROGRESS SHOULD STIMULATE THE TEXTILE INDUSTRIES

Progress in the development of American colors, declared Richard F. Bach, associate in Industrial Art at the Metropolitan Museum of Art, New York, at the recent Textile Design Exhibition held in the Bush Terminal Sales Building, that city, will have a widespread effect in stimulating the American textile industries and in the printing of original textile designs which are essential to the prestige of American fabrics and fashions.

American manufacturers in the industrial arts field must take advantage of their opportunities to improve their foothold in the markets of the world, added Mr. Bach. American distributors must be convinced that the American public deserves the best; American people must realize "plus quality" in their surroundings. To this end American schools must teach taste and appreciation rather than inane drawing

without objective, and schools of industrial art must be established if the American crafts are going to compete with those of Europe.

BECH, VAN SICLEN & CO. IN NEW QUARTERS

Bech, Van Siclen & Co., Inc., announce the removal of their executive offices and a number of their Sales Departments to their new quarters in the export and import district of New York. The entire tenth floor of the newly erected building located at 115 Broad Street, between Pearl and Front Streets, will be occupied.

The Chemical Division is very much pleased with the change to the more spacious quarters, which will enable them to take better care of their extended business activities. The latter include the domestic department, which recently has taken over the sales end of the Falcon Dye & Chemical Company, laboratories and warehouse, at 2 Elm Street, New York City. The Chemical Division, comprising the Export, Import and Domestic Departments, remains unchanged under the supervision of J. Schanzenbach.

The new telephone connections are Bowling Green 8640 to 8646.

Eastern Commerce gives figures representing the importation of caustic soda into Japan for the first half of this year as 42,655,000 pounds, and for the last half of 1919 as over 65,000,000 pounds, stating further that at present 70,000,000 pounds are accumulated on the Japanese market with little hope of a clearance of stock for many months.

Dye-a-Grams

We notice an absence these days of laborers going to work in silk shirts.

—o—

We'd rather take a chance on the Dye bill being passed by a Republican Senate with a Republican President than otherwise.

—o—

Those who desire to enforce the Blue Law Sunday have a lifelong job ahead of them—but then, that may be what they are after!

—o—

What has become of the workman who used to rave when he was "asked" to work Saturday afternoon?

—o—

It will be but a few short weeks until Harding tackles the job of pleasing everybody.

—o—

One way for the old maid or homely girl to become popular would be to let it be known she entertains her company in her father's cellar!

—o—

We recently read where Secretary Houston advocates a boost in taxes. To those who have not kept in touch with affairs, it would seem as if the Shipping Board were still in operation!

—o—

The trouble with the Longworth bill is that there is always somebody who, to fit his own case, wants to attach a reservation to it!

—o—

Excerpt from song Ad: "For Everybody Who Is On the Level, There's a Girl Who's On the Square." Times?

—o—

Judging by its editorial, one of the dye trade journals certainly makes no pretense of being consistent!

—o—

Xmas isn't what it was—that is to say, cigars are not handed out as freely as they used to be.

We would inquire, What or Howes, the chances for passing the Longworth bill this session?

—o—

Instead of Washington, D. C., we would say that Marion, Ohio, is now the melting pot of opinion!

—o—

Chas. M. Schwab says there is no place in America for a "loafer." Still, there are a lot of people loafing who live in America.

—o—

Science is against kissing, and, we understand, endeavoring to discourage it. Why not suggest marriage as a remedy?

—o—

This is the age of Home Brewnettes—and Roessler & Hasslacher Blondes!
G. E. T.

DYEING RAW SILK

A recently patented process of treating and dyeing raw silk has for its object to provide certain elements, such as metallic sales, to harden the cercin contained in grege silk, so as to render the same in condition whereby the silk will be resistant to the action of strong alkali or acid solutions, thus putting the silk in such condition as to readily allow the same to be dyed with vat colors, such as indanthrene, algol, helindone or the like. The patentee claims it has heretofore been impossible to dye grege silk with such colors, because of the high percentage of alkali present in the dye.

The silk is first saturated with a metallic salt, diluted in water, such for instance as chrome chloride, iron liquor or alum, thus producing an insulation or hardening of the fatty matters or cereaceous substances contained in and around the silk threads. Thereupon the silk is washed and then dyed in the usual manner with vat colors. The fabric made from silk treated in this way is then washed in a soap or alkali solution, such as is used in degumming silk.

NATURE OF PURE DYE SILK

By SAMUEL KLINE

Pure dye silk in the skein or after wound on bobbins is usually found to be much more difficult to handle and work to advantage than other silks that are dye weighted. Pure dye silk is hard to control on account of its being very light and fluffy, which causes it greatly to puff up and spread, when the ends easily fly out of their places. Therefore, to overcome these faults more easily it will be found better to make and build warps on the plain direct horizontal machine, but only of the limited weight and length of warps, which could be about $1\frac{3}{4}$ drams organ and about 224 ends to the inch, and about 450 yards or any shorter lengths. The advantage gained in making this kind of warps on the plain horizontal machine is that if the ends should fly and spread out of place while making a section of a warp, they are easily seen going out of place and they can be moved back easily while the section is making until finished. And when the warp is at the operation of beaming, every end will beam off straight into its proper place.

It is not advisable to make heavy warps too great in length on the plain direct horizontal warping machine if good fabrics are to be obtained.

The Swiss motion machine is preferred to all plain warping for long and heavy warps. The fault that is found with it in making pure dye silk warps is that very often the overlapping of all the sections at each revolution of the reel and also by the traverse of the machine holds the ends fast so that they are easily slackened, spread and thrown out of place. Then in the beaming operation the ends that are out of place are bound to break and tear out of the warp, causing ringers to accumulate and ends to be found missing and out of place for many yards. This may only be seen and picked up during the weaving operation, when the blame is usually placed on the workmanship in making the warp.—*Silk*.

RESERVES AND COLORED RESISTS UNDER ANILINE BLACK

By P. W. PLUZANSKI

A printing paste for a prussiate aniline black containing 50 grams Indanthrene per kilo is printed, carefully dried to avoid formation of Aniline Black, and overprinted with a paste containing caustic soda and 40 grams tin salts per kilo, which may be sighted by the addition of a few grams of alizarine. The well-dried, printed material is passed quickly through a rapid ager to oxidize the black, and then passed through again slowly (six minutes) in absence of air. Finish in boiling water and soap well. After drying, the fastness of the Indanthrene to chlorine is improved by steaming. If a color (black and Indanthrene) and a color (black and Flavanthrene) are printed simultaneously, and then overprinted with the alkaline mixture, fine blue, yellow and black effects are obtained. Very curious effects are produced by printing simultaneously Indanthrene, Flavanthrene, and a mixture of the two, simply thickened. After drying, the alkaline mixture containing tin salts is overprinted. Various effects which are difficult to obtain by direct printing are obtained by using naphthol prepared cloth, followed by a diazo bath. M. Battergay reports that he has tried the new reserves and colored resists under Aniline Black described, and obtained perfect results.—Sealed Note No. 1468, March 5, 1906, *Bull., Soc. Ind. Mulhouse*, in *Int. Soc. Dyers & Colourists*.

NOTES OF THE TRADE

The United Color & Pigment Company have started the manufacture of lithopone in their new plant.

The North Hudson Color & Chemical Company has been chartered in New Jersey at 614 Bergenline Avenue, West New York, with \$100,000 capital, to manufacture colors, chemicals, etc.

The Bethlehem Chemical Company has been incorporated at Dover, Dela., with \$3,500,000 capital to manufacture explosives. Those named are Dallett H. Wilson, Howard A. Lehman and Harrington Adams, of Bethlehem, Pa.

The Erco Ribbon Mill of Passaic, N. J., has been incorporated with a capital of \$6,000 to manufacture and deal in silks, ribbons, etc. The incorporators are Isadore Ehrenfeld, Joseph Ehrenfeld and Daniel J. Cooke.

The building formerly occupied by the Elmer Automobile Company on Main Street, at Putnam, Conn., has been leased by the Sanborn Chemical Company of Bound Brook, N. J., for a dye manufacturing establishment. The concern, at the start, will employ about a dozen men, expectations being to enlarge this force as the plant is extended. The concern is to engage in the production of coal tar intermediates used for manufacturing alizarin dyes.

Walter H. Tobin, formerly with the Carolina Company, South Kingstons, R. I., has accepted the position of overseer of dyeing at the Chase Mills of the American Woolen Company at Webster, Mass.

Arthur A. Lehmann has joined the staff of S. Wander & Sons' Chemical Company, Ltd., New York.

The Prudential Silk Mills, of Paterson, N. J., have been incorporated, with a capital of \$125,000, to manufacture and deal in silks, wools and other yarn and textile fabrics. The incorporators are Nathan Cohen, Lewis Cohen, Ethel Cohen and Ida Glick.

A man at Liverpool, England, has been sent to trial charged with selling a concoction of 99.34 per cent of water colored with aniline dye and flavored with red pepper as port wine. This, thinks a contemporary, evidences one more determined attempt to supplant logwood.

A decree issued six months ago in Costa Rica provides that after January 1, 1921, drills, printed cottons, blankets, linens and cotton covers may be imported free of duty into that country.

The Plymouth Silk Company, of Paterson, N. J., has been incorporated with a capital of \$100,000, to manufacture silk and other textile fabrics.

The Grasselli Chemical Company, Ltd., Toronto, Hamilton and Montreal, is offering a new chrome mordant blue under the name of Diamond Blue 2 GL which is of excellent fastness to light, fulling, carbonizing, steaming, etc. The color does not turn reddish in artificial light, and gives a nitric acid test very similar to Indigo.



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An Editorial

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THE 1919 DYE CENSUS

Tariff Commission's Report This Year Contains No Legislative Recommendations but Shows Encouraging Progress

BY far the most interesting event of the past week was the arrival of the Tariff Commission's Census of Dyes and Coal-Tar Chemicals for 1919, which has at last been distributed to the trade, and which, though behind its former schedule this year, was eagerly welcomed as another valuable addition to the reference sections of the libraries of all elements of the producing and consuming industries.

The report is a survey of our dye and coal-tar chemical industry in 1919 and presents the results of a special investigation made by the commission. It is divided into four parts, as follows:

Part I, a summary of the developments in the coal-tar chemical industry for 1919, describes the progress made in various branches of the American industry, and the relation of export trade to the native industry is briefly shown.

Part II, the Census proper, gives a detailed discussion of the significant facts in the production of crude, in-

termediate and finished coal-tar products in 1919. The dyes are classified by their methods of application, and imports of 1914 are compared with production in 1917, 1918 and 1919, and the number of employees, rates of pay and cost of research in the coal-tar chemical industry are shown.

Part III is a census of dyes imported into the United States from July 1, 1919, to June 30, 1920, and shows the quantity and value of individual dyes.

Part IV consists of an appendix which gives both imports and exports of coal-tar dyes and chemicals, as well as of natural dyes, since 1917. As customary, this section also contains a list of the manufacturers whose production during 1919 was reported to the Commission, and in this connection it is stated that, to the best of that body's belief, the canvass included every manufacturer of dyes and other coal-tar chemicals in the United States.

In all, 214 manufacturers submitted data to the Commission. Since the existing tariff law on dyes—that

of September 8, 1916—has already been analyzed by the Commission in its publication, "Dyes and Other Coal-Tar Chemicals," published late in 1918, and suggestions made for redrafting it in such a way as to carry out the original intent of Congress in passing it, the present report does not again take up this subject, about which the Senate still seems to be in doubt (?), but instead is confined to a discussion of progress, pure and simple. There is also much interesting information on the present position of the dye industries of England, Switzerland, France and Japan.

Throughout the whole report the Commission has displayed a spirit of fairness and impartiality, together with a clearness of vision as to the true situation of the American dye industry, which makes one wonder how the Senate can possibly remain blind any longer. For instance: "As a result, there were many cases of enforced substitutions of both German dyes (available from stocks) and American dyes. This substitution in the early years of the war materially damaged the reputation of American dyes." And again: "The domestic production of *certain* dyes has developed to a point beyond the quantity necessary for domestic consumption, and a large surplus has been available for export to foreign markets, particularly Japan and China."

The italics are the Commission's, and both extracts are illustrative of the close attention given to preventing any possible misunderstanding or twisting of the subject matter of the report by those who would rather win arguments than see some real progress made!

The salient features of the 1919 Census having already been given last week in *The Reporter*, we shall not here repeat them, but instead call attention to one or two parts of the report which seem of particular interest. Additional features of the report will be considered next week.

What the Census has to say of the

anthracene situation, for example, is most significant:

"Considerable progress was made during 1919 in the production of anthracene, but the problem of securing adequate supplies is still unsolved. In 1918 the actual anthracene contained in the crude anthracene produced was about a quarter of a million pounds, but very little of the crude product was refined. In 1919 the output of actual anthracene was about three times the 1918 production, and a much larger fraction of it was refined than in 1918. Notwithstanding this encouraging progress a much greater increase in output must be secured before there will be enough anthracene available from domestic sources to supply the demand for alizarin and vat dyes which are so important to a well-developed industry. It may be roughly estimated that the 1919 production of crude anthracene contained less than one-fifth of the amount of anthracene required for domestic needs. The fundamental difficulty is not primarily an actual lack of anthracene in the tar, nor are there purely technical difficulties in its recovery, but rather the fact that its removal leaves the pitch so hard that it does not find a ready market in this country. Any method of recovering anthracene which seriously disturbs the marketing of the other larger fractions of the tar, especially the pitch, would make the anthracene so expensive that the dyes derived therefrom could not be made on a competitive basis. In England and Germany large amounts of hard pitch were used for the briquetting of coal dust and coke breeze, but this industry is little developed in the United States. England shipped considerable amounts of anthracene to Germany before the war.

"The securing of supplies of anthracene adequate in amount and at a cost which is not prohibitive is perhaps the greatest difficulty confronting the industry. Whether the problem will be solved by the tar dis-

tillers or by the development of a synthetic process for making anthraquinone (the most important intermediate made from anthracene) from raw materials now available in adequate quantity cannot be determined at the present time. Active work along both lines is well under way and important progress has been made during 1920.

"Production of carbazol was reported in 1919 by one firm. It is obtained as a joint product in the separation of anthracene from coal tar. The development of a demand for carbazol would facilitate an increase in the production of anthracene from coal tar."

This is the sort of matter which the general public should have more of. Finding a market for hard pitch would scarcely occur to any as having the remotest connection with the upbuilding of an American dye industry—yet how simple it seems when set forth for a space of, say, about a quarter of a newspaper column! If more people could be made to understand—including the Senate—that to take a problem like the foregoing and raise it to the *n*th power would only begin to indicate the number of natural obstacles in the way of making American dyes, perhaps then we could have some constructive action.

In conclusion, the report's statements about employees, rates of pay and research are also of considerable interest:

"Employees and Rates of Pay

"Each of the 214 firms reporting the manufacture of coal-tar chemicals was asked to report the number of its employees receiving specified rates of pay on December 15, 1919, or the nearest representative date for which records were available. Twenty-four firms found it impracticable to give the information. In most of these cases the primary products were not derived from coal tar and the departments were not separately organized in such a way that the

number of men engaged in the manufacture of any one class of products could be definitely stated. Certain other firms had gone out of business during 1919.

"One hundred and ninety-one firms reported a total of 24,736 employees engaged in the manufacture of coal-tar products, of which 2,605, or 10.5 per cent, were chemists or engineers. This is probably a larger proportion of technically trained men than will be found in any other important manufacturing industry in the United States. Employed in the main under the immediate or general direction of these technically trained men were 22,131 skilled artisans and unskilled laborers. This is an increase over 1918 of 369 in number of the first group, but a decrease of 2,861 in the number of employees without technical training."

(A table shows the number and percentage of employees engaged in manufacturing operations receiving specified rates of pay in each of the

groups of technically trained and untrained men; and the percentage of the total of each group of employees receiving each specified rate of pay or more.) "The proportion of technically trained men receiving the higher rates of compensation is much greater than the proportion of untrained men. For example, 57.4 per cent of the technically trained men receive \$40 or more per week, whereas only 12.7 per cent of the employees without technical training received \$40 or more per week. Thirty-two per cent of the technically trained men received \$50 or more per week, whereas only 2.6 per cent of the men without technical training received that sum.

"A comparison with the corresponding figures for 1918 shows that wages during 1919 were substantially higher than in 1918. Especially was this true of employees without technical training, and technically trained employees who received less than \$50 per week. For example, during 1918, 15.4 per cent of all employees without technical training received less than \$20 per week, whereas in 1919 only 7.8 per cent of such employees received less than \$20 per week. Moreover, in 1918, 5.9 per cent of all chemists or technically trained men received less than \$20 per week, whereas in 1919 only 3.9 per cent were receiving less than this weekly rate. During the same time the group of men without technical training receiving rates of pay great-

er than \$20 per week increased by 7.6 per cent, whereas chemists and technically trained men increased by only 2 per cent. At the high rates, however, this increased percentage is quite reversed. For example, there was an increase of 6.3 per cent in the group of technically trained men receiving \$40 per week or more, as compared with an increase of 0.5 per cent of employees without technical training."

(In another table a comparison is made of the percentages of technically trained men and men without technical training for 1918 and 1919.) "There was little change in 1919 as compared with 1918 in the percentages of both classes of men receiving the higher rates of pay (\$50 and more per week).

"Research Work

"Of the total of 214 firms, 65 had separately organized research laboratories for the solution of technical problems in the manufacture of their products and for the discovery of new products. During 1919 the net operating expenses of these research laboratories, together with the cost of research work done in the laboratories not separately organized for research, was \$4,274,247. This includes salaries, apparatus and materials, after deducting the value of salable products made in research laboratories. This figure is probably an understatement of the real cost of ex-

perimental work, since it does not include in all cases the cost of experimental work done as a part of manufacturing operations and not shown on the books of the companies as a charge against research."

"ENGLISH DAY" IN FRENCH DYEWORKS

Recently a trial was made of what is termed the "English day" of working at the large establishment of Le Blanchisserie et Teinturerie de Thaon-les-Vosges. The decision to make the trial was come to by common accord between the work people and the management, mainly with the object of reducing as far as possible the consumption of coal and so avoiding stoppages. In the month of April the new hours of work were from 7.30 A. M. to 4.30 P. M., without stopping for meals. Previously to this alteration the hours were 6.30 A. M. to 11.30 A. M. and 1 P. M. to 6 P. M. The new conditions involved therefore the saving of one hour. After a couple of weeks the results, both in the saving of coal and in maintaining the production of the works, were so very satisfactory that a further change was made again with the mutual approval of the employees and the employers. This time the hours were fixed at 7 A. M. to 3.30 P. M., without interruption, thus affording a working day of eight and a half hours. The wages paid were the same as when the working day consisted of ten and a half hours. Although the work from the start in the morning to breaking off in the afternoon was intended to be continuous, the management provided a service of traveling food wagons, selling to the workers sandwiches, chocolate, cheese, etc., and hot coffee and tea, all at cost price. This system has been followed since, and is to be continued indefinitely, as all concerned are so well pleased and satisfied with the results.

It is learned through the press that a proposal has been made at the Italian Embassy at Tokio to send a mission of Japanese business men concerned in sericulture to Italy.

NEW A. C. S. HEAD SOUNDS WARNING TO PROTECT DYES

Protection for the growing American dye industry, as vital to the nation, is urged by Dr. Edgar F. Smith in a statement issued apropos of the announcement of his election to the presidency of the American Chemical Society.

"The latent powers of the American chemists," says he, "were made evident in the recent World War. When one stops to review the wonderful results obtained by them in so many different lines, one can't help but wonder whether this force is to be prevented from continuing its activities because of inadequate protection.

"There isn't the slightest doubt that the United States is capable of producing chemical products as quickly, as abundantly and of the highest quality, as any nation in the world. However, if we are to continue as a chemical manufacturing nation, adequate protection must be given to those who conduct the great chemical industries."

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 of the American Dyestuff Industry. Unbiased
 contributions appreciated.

A. P. HOWES, President
 LAURANCE T. CLARK, Editor

IMPORTED BRAINS AS TIME- SAVERS

Included among our imports for the month of January were goods admitted to entry two weeks ago at the Port of New York, described as German chemical brains and consigned to the Du Pont Dye Works, Wilmington, Del. The only protests came from the port of origin and from the Netherlands Government; certain individuals connected with both, for reasons of their own, did not wish to see any of that kind of material exported from Germany; but that was all. The fabricated objections did not get very far with Uncle Sam's officials and the goods were allowed to proceed on their way unobstructed by legal machinery.

The reader has already recognized Drs. Otto Runger and Joseph Flachslander, German dye chemists, whose combined annual salaries are said to be going to total more than \$50,000 during their stay in Wilmington, and about whom the press has had a very fairish bit to say since their arrival.

The New York Times, however, seems vaguely to disapprove of their presence here in the role of dye experts, evidently because of their past associations. This daily declares that "this item of news is going to be particularly interesting to our chemists of home growth, the great majority of whom are getting salaries somewhat less."

The editorial continues: "None of the American chemists, probably, would be willing to confess that the

science of chemistry, except perhaps in some of its industrial applications, is more advanced in Germany than in the United States—that the German chemists know anything unknown here. Most, or at any rate many, of our chemists, still more probably, would declare that if they are less experienced and successful in the utilization of chemical science in industry it is only because in the past our manufacturers have been less appreciative than their German rivals of science as an aid in business."

It seems as though this were battling ever so little outside the baseline! The REPORTER cannot presume to speak authoritatively for the American chemist, yet if we were permitted to voice an opinion it would be to the effect that the American dye chemist, at least, knows mighty well that the German dye chemist of equal standing *does* know some things not yet learned here, and it is in this very particular matter of "industrial applications" which the Times refers to that he can still pick up some valuable pointers on the manufacture of vat dyes and the host of special shades which yet remain unconquered. The real point, to our way of thinking, is that the Germans once tried—and successfully—to make Americans believe that no other mind but the German chemical mind *could* travel far enough along the thorny path of dyestuff knowledge to accomplish the same results, and this the American dye chemist claimed and superbly proved to be false. He did not claim, and does not claim yet, that the chemists of the kartel can teach him nothing. This is a game where experience alone—mere length of service—all other things being equal, counts for a very great deal, and the elder German dye chemists have all had years of experience—some of them five, six or seven years of practice for every one year possessed by the Americans. What is to be expected when two such unequal sets of experiences compete on the same problems of industrial application? That

is precisely one of the reasons why America is going to have the licensing system for the protection of her dye industry until the race is more even.

However, it is lamentably true that if American dye chemists are less experienced it is, to a certain extent, because of the former lack of appreciation of scientific aid on the part of our business men. That condition is, we believe, now in process of elimination—although the process is not being materially hurried along by the Senate, so far as we can see, and hence it is not fair to put the entire blame on the business men.

But the evident disapproval of the presence of these two German dye chemists manifest in the *Times* editorial is contained in the concluding paragraph, which follows:

"That a good many American dyes made during and since the war have been inferior to what like German dyes used to be is the pretty nearly

unanimous verdict of American women, including some whose pro-Germanism is measured by the degrees below the zero mark. Even these women, however, will be more humiliated than pleased by the suggestion that the German chemists have to be brought over here to teach American chemists how to make good dyes."

We grant that this is the verdict of most American women to-day and that their probable reaction to the importation of the German dye experts has been accurately foretold. The reason is that most women do not know how much the reputation of American dyes was damaged by the substitutions and mixtures freely practised from necessity and still continued by many seeking to discredit the American dye industry, and because they do not comprehend that it will be the fruits of long experience—which only time can give us—that these Germans will principally have

to offer. But we expected more of the *Times*, which has plunged headlong into the old and popular error and then given the matter a needlessly unsavory twist by suggesting that we must needs feel humiliation.

American dye makers are certainly not getting much encouragement from the Powers at Washington just now, and are interested in any legitimate means for getting results. In the case of the Du Ponts the means chosen is not only legitimate but, to our way of looking at it, well thought of. Time is a tremendous factor in the future welfare of the dye industry, and it would seem that the Germans could save us a great deal of time which would otherwise be wasted, to say nothing of effort and expense.

As for Drs. Runger and Flachslander, we congratulate them on their move and hope they will stay among us and become useful citizens, for we verily believe they have come to a better country and will be living under a better form of government—despite what is often said of it during campaigns—than the one they have left. We hope they will absorb the American idea to such an extent that by 1922 they will be contributing articles to the press on the need of haste in passing the Dye bill, and we likewise hope that their reported salaries may, perhaps, have some effect on American business men.

A general tendency to make the chemist's post a more remunerative one here would inevitably produce a

greater number of men worth \$25,000 a year, and in addition would prove one of the most fruitful investments ever made by the industrial world.

HUGE SHIPMENT OF DYES HERE FROM ANTWERP

One of the largest lots of aniline colors received in New York City since the close of the war reached that city last week on the Steamer *Finland* from Antwerp. It consisted of 817 packages, 9 casks and one cylinder of anilines, which were shipped to A. L. Ciba & Co., Inc., A. Klipstein & Co., F. Bredt & Co., American Aniline Products, Inc., Sandoz Chemical Works, New York Color & Chemical Company, and the American Dyewood Company.

"THREE TO FIVE YEARS' PROTECTION"—DR. ROSE

That from three to five years' protection of the American dye industry against German importations of dyes—thus following the lead of Great Britain in its passage of the dyestuffs regulation measure—will be sufficient to place the American dye industry on a basis to compete effectively with whatever competition may be brought against it, was the statement recently of Robert E. Rose, Ph.D., chemist of the dyestuff branch of the Du Ponts.

Dye experts are now convinced that sufficient progress has been made to assure the textile mills of the country a supply of dyes equal to those imported from Germany before the war, and assert that factories are now financed and equipped to produce 85 per cent of the dyes required by American industries, and further that the additional 15 per cent can be made if American manufacturers are given from three to five years' time under tariff protection to develop special processes under favorable auspices.

Dr. Rose belittled the numerous stories that have been told since the infancy of the dye industry in America, to the effect that German dye patents in the United States gave little of the complete processes, leaving American chemists to ferret out the vital secrets.

"The impressions that the Germans

left much untold is not altogether correct," Dr. Rose said. "The processes they registered in the United States Patent Office were extremely careful to cover everything. True, they did not give all the ingredients. But it was not as difficult to figure what the other ingredients were as it was to determine the proportions and the temperature at which they must be used. American chemists have accomplished a great deal.

"Already they have produced dyes as good as those imported from Germany before the war."

BASLE DYE EXPORTS DECLINE SLIGHTLY BUT QUINTUPLE IN VALUE

Exports of aniline dyes during 1919 from Basle, Switzerland, were slightly under 1913 in quantity, but more than five times the value of 1913 shipments. The increase over 1918 was 30 per cent in quantity and 35 per cent in value. Color exports, including artificial indigo, reached 6,548 metric tons worth \$23,866,891 in 1919 as against 4,832 tons worth \$17,403,053 in 1918, and 7,035 tons worth \$4,794,960 in 1913. The United States purchased \$2,895,379 worth in 1919, \$2,308,945 in 1918, and \$979,882 in 1913. Although the general demand for these products was greater throughout the year than the factories could supply, the output was reduced on account of the difficulty of procuring sufficient coal and raw materials and because a shortage of transportation facilities.

The chemical and pharmaceutical trade was exceptionally good in the first half of the year owing to a world shortage of drug chemicals following the war. Japanese and American competition affected the prices materially in the latter part of the year.

NEW TANNING PROCESS FROM AUSTRALIAN SHRUB

A shrub growing principally in the gold fields of Australia has been found to possess properties suitable for tanning purposes, according to the World Salesman. Leather tanned by the extracts from this shrub is adjudged equal to the best, being especially useful in lining hats. Some excellent samples of fast dyes have also been extracted from this shrub. An extensive area has been granted a new enterprise by the west Australian minister for mines, over which the company will strip the bush to feed a tanning and extracting works.

FOREIGN TRADE OPPORTUNITIES

Names and addresses of any of the firms mentioned below may be obtained by direct application to the U. S. Bureau of Foreign and Domestic Commerce, which compiled the list, or any of its district and co-operative offices. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers. Applications for particulars should refer to opportunity numbers; and in case in

formation is desired regarding more than one, inquiries should be made on separate sheets.

34254—A commercial agency firm in Argentina desires to secure the representation of firms for the sale of hardware, *textiles*, and fancy goods. References.

—o—

34176—A manufacturer in the Azores desires to purchase *machinery* used in the manufacture of *cotton* and *unbleached cotton cloths*. Photographs of the machines and net prices are requested.

—o—

34229—A mercantile firm in England desires to purchase or secure an agency for *aniline and alizarine colors*, *chemicals for dyers*, *calico printers*, and wholesale chemists. Payment to be cash on arrival of goods. Reference.

—o—

34213—A commercial agent from Australia is in the United States, and desires to secure an agency for the sale of *dry goods*, *textiles*, *knit goods*, hardware, electrical goods, enamelware, household utensils, and paper. Reference.

—o—

34208—A commission agent in India desires to secure an agency for the sale of *piece goods*, hardware, paper, matches, motor cars and bicycles, *dyes*, and glass. Quotations should be given c. i. f. Indian port. Terms: 30 days payment against documents through any exchange bank. References.

—o—

34221—A mercantile company in Egypt desires to purchase or secure an agency for the sale of leather, hides, and skins, women's shoes, shoeblacking,

boots, *silks*, *fabrics*, *hosiery*, etc. Quotations should be given c. i. f. Egyptian port. Correspondence should be in French. References.

—o—

34205—A firm of merchants in India desires to secure an agency and purchase *piece goods* of every description, and sundries. Quotations should be given c. i. f. Indian port. Terms: Drafts at 30 days less 5 per cent commission, against documents. References.

—o—

34249—A manufacturing firm in Australia desires to secure an agency for the sale of *dry colors*, *pigments*, *dyestuffs*, bronze powders, and all materials used by oil and color merchants and paint and printing ink manufacturers. Quotations should be given c. i. f. Australian port. Payment to be by draft against documents at destination. Reference.

—o—

34271—A mercantile firm in Argentina desires to secure an agency from manufacturers for the sale of *cotton*, *wool and silk hosiery* in light and medium weight for men, women, and children; and also *underwear and knit goods*. Quotations should be given f. o. b. New York or c. i. f. Argentine ports. Payment to be made by 30 to 90 days' sight draft, or by other arrangements. References.

—o—

34227—The representative of a company in north China is in the United States and desires to secure an agency for the sale in Mongoli and north China of farming implements and machinery, iron and steel products *chemicals*, *dyestuffs*, medicines, linoleums, automobiles and trailers, flour-mill ma-

chinery, *textile machinery*, soap-manufacturing machinery, and *cotton textiles*. Reference.

—o—

34230—A firm of importers in India desires to secure the representation of manufacturers and exporters for the sale of *chemicals*, matches, *colors* and *dyes*, *woolen piece goods*, *yarns*, *hosiery*, imitation pearls, hardware, stationery, cutlery, camphor, dry ginger, and other fancy sundry goods. Quotations should be given c. i. f. Indian port. Payment to be by 30 days' sight drafts. No reference offered.

—o—

34276—A company of merchants in Argentina desires to secure an agency from manufacturers for the sale of *handkerchiefs* of all kinds, suspenders, and garters, shoe and corset lacings, notions, *textiles in general*, *piece goods* for men's clothing, artificial leather or leather substitute for upholstery, and *duck and awning cloth*. Quotations should be given f. o. b. New York or c. i. f. Argentine port. Payment to be made by 30 to 30 days' sight draft, or other terms. References.

—o—

34175—A commission merchant in Turkey desires to enter into communication with firms with a view to securing agencies for the sale of *cotton and woolen textiles*, *chemical products*, *aniline and other dyes*, glaze skins and leather, wax and varnish, stationery and office supplies, soap and toilet articles, metallurgical products, transmission belts, machinery, motors, pumps, tools, agricultural machinery and implements, presses, and turbines. Catalogues and samples are requested. Correspondence should be in French. Reference.

Exports of waste silk from Yokohama from July 1 to October 21, 1920, were 4,652 bales to Europe and 1,590 bales to the United States. As compared with the same period of 1919, exports to Europe showed a decrease of 3,985 bales and those to America of 3,439 bales.

BRADFORD DYERS AND UNEMPLOYMENT INSURANCE

Many years ago the Bradford Dyers' Association had before it the hardship suffered by workers consequent on unemployment, and so far back as January, 1907, an agreement was drawn up with the societies representing their employees in Yorkshire providing that the Bradford Dyers' Association should pay an amount equal to, and in addition to, that paid under the workers' union out-of-work benefit, which would make a total of 16s. per week per man in the first ten weeks and 10s. per week for the next ten weeks. This arrangement was continued year by year until the beginning of 1913, when in the course of negotiating the terms of a new agreement the provision was abandoned at the instance of the unions.

During the six years this arrangement had been in operation valuable experience was gained on the subject of insurance against unemployment. It may be taken that the number of employees covered by the agreement was

approximately 5,000, and on this number of employees the cost works out at 3s. 3d. per man per year. The maximum year was 1908, when £1,125 was paid, and the cost works out at 4s. 6d. per man for the year. [At normal exchange the pound sterling is equivalent to 4.8665, the shilling to \$0.243, and the English penny to \$0.02.]

Since this arrangement was terminated ex gratia arrangements have been entered into by the Bradford Dyers' Association to meet specific cases from time to time, the joint contributory basis always being followed, viz., the association supplementing the union out-of-work pay by an equal amount. The procedure is that the union makes the payments according to its rules, paying just double the benefit provided by the rules, and then reclaiming periodically the amount which it had paid on behalf of the association.

PAYMENTS UNDER ASSOCIATION'S PLAN —COMPARATIVE COSTS

During the later stages of the war the question of a general unemployment insurance scheme was discussed many times with the unions, without, however, any definite arrangements being arrived at, owing to the fact that practically no unemployment existed at the time. Therefore, when negotiations for improved wages and conditions arising out of an application made by the unions led to an agreement in October of 1919, the association appended an addendum, in which the directors

again urged on the unions the need for much more generous provision against unemployment. They stated that the existing rate of 10s. per week was inadequate, and they proposed that the unions should pay the Labor Gazette percentage (increased cost of living) in addition, making on the then figure of 115 a payment of 21s. 6d., and that the association should add an equal amount for men who had been in their employment twelve months, with a scale for shorter periods. On an index figure of 115 an unemployed man would thus get 43s., or nearly two-thirds of his standard wage for a full week.

The proposals made in this addendum were under consideration by the unions concerned up to the middle of this year, but owing to difficulties connected with the necessary alteration of rules, etc., they have not been able to accept the offer as made, and certain modifications have been introduced to meet their views. The unions intimated that they could not see their way to adopt the sliding-scale proposal that the out-of-work pay from the unions should be 20s. for an index figure of 100 per cent with variations according to the varying index figure; they would, however, alter their rules so that the out-of-work benefit should be 20s. per week. In reply to this the directors of the Bradford Dyers' Association intimated that they were prepared, so long as the index figure of cost of living was not less than 100 per cent to pay an equal amount to that which was paid in out-of-work pay by the unions to employees of the association who were thrown out of work. In the event of the index figure falling below 100 per cent the contribution of the association would be reduced in proportion to the amount of the fall below 100. The total out-of-work benefits would thus be 40s. per week so long as the index figure reached or exceeded 100 per cent. That was the stage the new scheme for insurance against unemployment had arrived at between the association and those representing its employees, when the national scheme created quite a different situation, and the matter for the moment is in abeyance.

What is of greatest interest at this moment, in view of the operation of the national scheme of insurance against unemployment early next month, is the experience of the Bradford Dyers' Association as to the cost of working of its scheme compared with the cost under the national scheme and the benefits received by the employees. It may be assumed that the number of dyehouse operatives in the Yorkshire area covered by the existing agreements, and eligible for out-of-work pay, is approximately the same as when the old scheme was in operation, viz., 5,000, and the scale of benefits having been increased from 8s. to 20s. per week, basing estimates on the figures cited above of the average cost over a period of six years, the cost to the association would be 8s. $\frac{1}{2}$ d. per man per year, or 1.86d. per week. On the basis of the year 1908, when unemployment was at a maximum, the cost would be 11s. 3. per man per year, or 2.6 d. per week. The cost to the association of contributing for these 5,000 employees under the State scheme would be 15s. 8. per employee per year, or 3.862d. per week. In the representations the association has made to the authorities in London in favor of their employees being permitted to remain under the arrangement and not included in the State scheme, it has drawn attention to the increased benefit the men receive, viz., 40s. per week, as against 15s. per week under the State scheme, and the economy of working, as the money is paid out by means of existing machinery on a long-established and proved system, and with the minimum administration.

CEYLON TRADE IN TEXTILES CURTAILED

The values of cotton and woolen goods imported by Ceylon in 1919 are unfavorable compared with those of previous years. Increased cost of rice has left a smaller surplus with which the natives could buy articles of clothing. In 1915, 36,000,000 yards of cotton goods were imported; in 1916, 40,000,000 yards; in 1917, 39,000,000 yards; in 1918, 36,000,000 yards; and in 1919, 32,500,000 yards. The most

important feature of the trade was the increase of the value of cotton goods from India to the disadvantage of exports from the United Kingdom.

Difficulties in securing supplies and increased prices in supplying markets caused a steady decrease in the value of woolen goods.

It would appear that Ceylon has followed the practice of other countries in an increased use of silk goods. Where approximately \$215,000 worth of silk was imported in 1918, this figure increased to \$443,000 in 1919, the chief increases having been in imports from Japan, France and China.

With a view to supplying domestic demand as well as for exporting to neighboring communities, endeavors are being made to establish the manufacture of textile machinery in Australia. Those interested in inaugurating this step are said to be in touch with foreign firms manufacturing the many varieties of machinery required in the textile industry.

NOTES OF THE TRADE

U. S. Trade Commissioner W. J. Page, in London, last week cabled the Bureau of Foreign and Domestic Commerce that the British Dyestuffs Import Regulation Act would come into force on Saturday, January 15. The personnel of the licensing commission had not been determined at the time of his message, nor had it been decided just what intermediates or constituent chemicals will come under the jurisdiction of that body.

Under the heading "Tanning and Dyeing Materials, Paints and Varnishes," which may or may not mean much to the reader, Bulgaria reports total importations to the value of 8,067,261 *leva* during 1919 as against 2,874,265 *leva* in 1912. Exchange in the past year was twenty *leva* to the dollar.

Recent word from the Netherlands shows that that country imported paints and dyes to the value of \$4,143,200 in 1917, \$2,925,200 in 1918 and \$5,470,000 in 1919. Under the same heading, her exports were valued at \$3,233,600 in 1917, \$472,400 in 1918 and \$4,930,000 in 1919.

The Japan Advertiser notes that the Japanese Government will soon appoint a committee for the disposition of Germany's reparation dyes arriving in Japan. The committee will decide when, how, and where this stock will be sold. Approximately 88 tons of German dyes are in warehouses in Kobe.

Imports of chemicals, drugs, dyes and colors to Nigeria, British West Africa, were valued at \$278,540 in 1913, at \$373,777 in 1918 and at \$791,932 in 1919, according to reports from that quarter.

Late information from Shanghai shows that the value of imports of aniline dyes for that region was \$2,647,962 in 1913; \$1,714,557 in 1918, and \$2,761,783 in 1919.

Information comes from Consul L. J. Keena, Lodz, Poland, to the effect that many buyers have arrived from Galicia and are purchasing large quantities of white cotton products. The factories are running well, and some are even introducing three shifts. Also, many purchasers from Hungary have arrived and are placing large orders. It is expected that Hungary will become a steady market for Lodz textiles.

The Polish Economic Bulletin states that the Danzig authorities have expressed the wish to dispose of all the pharmaceutical materials left behind by the German army. They would exchange, at a very low price, these commodities for textile goods from Lodz.

An increase is noted in the export of Japanese piece goods, particularly in the case of gray shirtings and white cotton cloth. The output in September, 1920, of piece goods amounted to 62,662,000 yards, of which 61,794,000 yards were exported.

The flotation of the Austral Woolen Mills Proprietary (Ltd.), with a capital of \$1,215,000, for the erection of a factory at Collingwood, Victoria, Australia, was recently announced. It is proposed to carry on the manufacture of wool tops, serges, and worsteds. It also stated that a thoroughly modern woolen mill is soon to be erected at Inveresk, Launceston, Tasmania. Preparatory work is already under way, actual construction depending upon the delivery of material.



AMERICAN DYESTUFF REPORTER

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"WE LEARN FROM THE CENSUS—"

Instructive Items Gleaned from the Tariff Commission's Able Interpretation of Dye Statistics

RESUMING consideration of the U. S. Tariff Commission's Census of Dyes and Coal-Tar Chemicals for 1919, we take up this week in conclusion Part II, the Census proper, which deals with statistics of the crudes, intermediates and finished coal-tar products made in this country during that year. Comment on the anthracene situation was noted last week, and we may now proceed directly to the third subdivision, headed: "Dyes and Other Finished Products."

The finished products of the coal-tar chemical industry are stated by the Commission as follows: (1) Dyes, (2) color lakes, (3) photographic chemicals (developers), (4) medicinals, (5) flavors, (6) perfume materials, (7) synthetic phenolic resins, (8) synthetic tanning materials, and (9) explosives. The report adds farther on: "The technical and generic relationship of these different classes is exceedingly close. To a large ex-

tent they use the same intermediates. Phenol enters into the manufacture of some representatives of each of the nine classes of finished products. Aniline is used for making dyes, lakes, medicinals, photographic chemicals and explosives. Numerous other examples showing this close relationship could be cited."

It is hardly necessary to remind our readers that just as the dye industry is a key industry to others, just so is that portion of the Census above quoted the "key" to the present legislative situation. It constitutes, apart from any consideration of whether America must make her own colors and be industrially independent or not, the one unanswerable reason why America must have a licensing system for the protection of the dye industry as the sole means of economically providing us with the plant and personnel for the production of such war necessities as explosives and poison gases. The

relationship seems like such a very simple thing when set forth in a few words, as it is above in the Census, yet if it could be grasped just once by a majority of the citizenry of this country, the entire question of the future of the dye industry, as well as the future of America as a leading nation of the world, would be settled without further ado. It is well to hold fast to this relationship all the time, letting it be at the back of your thoughts and coloring every utterance when discussing the dye situation, for it is the pith and kernel and essence of the whole affair. It is one of the most real, practical facts in existence—and one of the most relentless toward those who would ignore or attempt to glide over it. Opponents of the licensing scheme may lead you away from the main topic time and again, may involve you in a welter of minor details and get you into innumerable by-paths and *cul de sacs*, yet any discussion must inevitably come back to that broad, fundamental truth. It is wholly unanswerable, and how well its unanswerableness was recognized by the British, for example, was shown by its repeated appearance in their controversy in the form of the well-chosen slogan, "There is only one argument!"

In previous reports, notably the Census of Dyes and Coal-Tar Chemicals for 1918, pages 26 and 38, the Commission also at that time pointed out the close relation of dyes to explosives and poison gases, and the ease with which a dye factory can be converted into an explosive or poison gas plant in an emergency, while in the present Census it again takes occasion to remind readers that since the signing of the Armistice certain plants in the United States which were erected for the manufacture of explosives have been used for the manufacture of intermediates and dyes. The transition, of course, works equally well either way, and that is the reason why the dye industry constitutes such a perfect standing army—an army of minute

men, be it added—which, unlike any other army in existence, *supports itself in efficient training until needed.*

The report also states: "The synthetic phenolic resin industry and the synthetic tanning material industry are not so closely related to the dye industry as are the other cases cited. They are dependent chiefly upon phenol and formaldehyde, and therefore furnish an outlet in times of peace for the material, phenol, which is of such vital military importance."

Surely the Tariff Commission deserves high praise for the manner in which it, as a wholly disinterested, neutral body so far as the controversy over the Dye bill is concerned, has got at the truth and stated it so as to give an accurate, well-balanced interpretation of its real significance. It is one thing to gather facts, and quite another to set them forth so that each falls into its proper place and receives emphasis according to its due—so that the relatively unimportant neither appear more prominent than the important nor less prominent than the wholly insignificant. It is one thing to gather statistics, and quite another to make them "talk" so as to really reveal themselves. The Tariff Commission, in its 1919 Dye Census, has unquestionably done both.

The first of the tables relating to finished products in Part II gives the production in 1919. The common name of the product appears, accompanied by a number identifying it according to the 1914 edition of the Schultz tables. In a parallel column appear numbers referring to American manufacturers given in the list in the Appendix, an "x" signifying that the product was made by a manufacturer who would not consent to the publication of his identification number. Then follow the quantity in pounds produced in 1919 and the value in dollars, blanks indicating that there was actual production during the year but that the figures could not be published without revealing information with regard to

the output of the individual firms. The figures thus concealed, however, are included in the totals, which will be published in detail next week. The final column gives the average price per pound for which the product sold during 1919.

The second table shows a comparison of the published figures for 1918 and 1919, as well as the average price per pound for each year; but still another table shows the dyes only, and arranged according to the method of application on the fiber, and gives a comparison of imports, 1914, with the production of dyes by classes in 1917, 1918 and 1919. Although it is admitted that the distinction between certain groups is not clear-cut, particularly between acid and mordant dyes, it is believed that this grouping more nearly reflects the progress of the industry than does the grouping in the two previously mentioned tables, which classify the dyes according to chemical structure. This is especially true from the consumer's standpoint, as he is directly concerned with the application of the dye on the fiber. This same information is also shown graphically for the benefit of those who prefer their statistics served up in this manner.

The classification includes dyes under the following headings: Direct; Vat (including indigo), (a) indigo, and (b) other vats; Acid; Sulphur; Mordant; Basic; Dyes for Color Lakes and Spirit Soluble Dyes; Unclassified. Space forbids a glance at more than the totals, which show that we imported 45,950,895 pounds of dyestuffs in 1919, produced 45,977,246 pounds here in 1917, produced 58,464,446 pounds in 1918, and produced 63,402,194 pounds in 1919. In this connection it is interesting to note, from another table, that dye imports under identically the same classification, for the fiscal year of 1920, which means from July 1, 1919, to June 30, 1920, were 3,501,147 pounds. It might also be advisable to note particularly, when thinking about these figures, that the 1918

production total, for instance, does not mean 63,402,194 pounds of dyestuffs needed by American consumers. Although we produced a greater *quantity* of dyestuffs than was needed, we did not produce a greater number of *types* than were wanted or needed; there were excesses of some types, which we exported, and a dearth of others, as we shall presently see when the vat dyes are referred to. Hence, it is not to be hastily concluded, as the Commission itself elsewhere points out, that these figures mean American dye factories are yet supplying all the wants of American consumers.

Concerning natural dyes, it is interesting to note that the Commission has the following to say: "In 1916 the scarcity of coal-tar dyes led to an abnormal consumption of natural dyes. Since then the steady increase in the output of coal-tar dyes has caused a marked decrease in the use of natural dyes. This forced use of natural dyes demonstrated their

merits for certain purposes and has extended their field of application. Competition between natural and synthetic dyes results largely, but not entirely, in a victory for coal-tar dyes." Of natural indigo it says: ". . . imports for consumption . . . declined from 1,637,914 pounds in 1918 to only 234,991 pounds in 1919, and in all probability will soon be negligible, as was the case prior to the war."

Lastly, we give the Commission's report on "Indigo and Other Vat Dyes" in full:.

"It is in this class of dyes that the domestic industry has been particularly backward, and in 1919 the quantity of vat dyes, with the exception of Indigo, which is the most important, was still inadequate for domestic needs. The production of Indigo (20 per cent paste) during 1919 of 8,863,824 pounds, a slight increase over 1914 imports, may be regarded as the most important development of the American dye industry in 1919. The output exceeded the domestic demand and large quantities of Indigo were exported. Of all the dyes produced in this country Indigo ranks second only in quantity to Sulphur Black, but exceeds it by over \$1,000,000 in value. Brom-indigos, which are of great value for cotton dyeing and printing, were manufactured in considerable quantity in 1919.

"The manufacture of vat dyes, not including Indigo, is less developed and the output more inadequate for our domestic needs than any other class. During 1919 four vat dyes (yellow, blue, green and violet) were placed on the market by one firm, but the output was only a small fraction of the domestic demand. A second firm announced the production of three vat dyes in 1920. Other concerns have also worked on vat colors, several of which, including two yellows and a red, have already been offered for sale. This indicates that fundamental developments in this field are under way and an in-

creased output of vat colors during 1920 may be expected. The manufacture of these dyes has required the highest technical skill, long research, and a large investment of capital. On account of the present small domestic production they are probably the most needed of all, although the normal quantity consumed annually is smaller than that of other classes of dyes. They are used for dyeing and printing fast colors on cotton and, to a lesser extent, on silk.

"Vat dyes, other than Indigo, were imported during 1919 to the extent of nearly 2,000,000 pounds, or about 4 per cent of the total (amount of dyes imported) for that year. The production of these dyes in 1919 was about 390,000 pounds, or only one-fifth of the pre-war requirements. The future development of a balanced industry will necessitate a greatly increased output of these dyes. This will be possible only when an increased output of anthracene or synthetic anthraquinone has been attained. The development of a variety of vat colors should also include the manufacture of Thio-indigoids."

There, as we all know, is the answer to the adequacy of that 63,402,194 pounds' production of coal-tar dyes in the United States during 1919. That which we need the most, if we are some day to compete with Germany, we now make the least of, while we make a surplus of many other varieties. Lose no opportunity to make Mr. Shopper and, much more important still, Mrs. Shopper, understand this thoroughly, and understand also that although figures cannot lie they are often tricky, and that there is a very dangerous trick in that 63,402,194 when hurled glibly at them by those who are trying to play Germany's game of renewed dye domination.

Again The REPORTER offers its congratulations to the Tariff Commission for having set forth the facts
(Concluded on page 12.)

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A. P. HOWES, President
 LAURANCE T. CLARK, Editor

VERBOTEN!

Despite occasional conversation here and there to the effect that Germany may be trying to play a rather neat joke on American dye manufacturers by sending to our shores dye chemists apparently proficient in their calling but in reality lacking ability to show American chemists anything which they do not already know, it would appear that Drs. Runger and Flachslender, who recently managed to win out in a race against time and German governmental machinations and to gain the doors of the Du Pont citadel with the agents of the Fatherland clutching at their very coat-tails, so to speak—it would seem as though these two gentlemen had some very useful information to give after all. Not that many ever doubted it anyway, but still some people must have their little say or else be extremely unhappy carrying it around unsaid.

Consider the latest development. Two more German dye chemists, also engaged to join the Du Pont forces, have just been denied passports by the German authorities, who declare bluntly that it will injure German business to permit them to go to America. These men are being kept prisoners; there is no other name for it. Drs. Runger and Flachslender made their escape. We know how hard Germany tried to prevent them from being admitted to this country after they reached Ellis Island, but it was then too late. She caught the others before they could

get away. Germany simply does not want Americans to learn what we undoubtedly can from these chemists. Such has always been her policy, denying to American subsidiaries of the "Big Six," for instance, permission to make the needed colors of the parent houses after the English navy told her she could no longer send those colors here. Two, and two only, have succeeded in breaking away, but we shall see how many more succeed in days to come.

Over here such restraint would be regarded as the limit of high-handed tactics for a government to adopt toward the persons of free men. It serves very well to illustrate the chances which an industry run on American principles would have should it essay, unprotected, to go up against an industry fostered by a type of government which can and does use its power so frankly and so efficiently. For efficient the German system is—efficient as probably no other of like civilization is to-day—and it remains only for our own government to be just as frankly efficient in protecting American interests by means of a licensing law.

Last week it was suggested, in answer to an observation of the *New York Times* which hinted our American women would feel "humiliated" if they thought that German chemists could tell ours anything about making dyes, that these German dye men could save us a great deal of time which would otherwise be wasted, and that this would probably be their principal contribution to the Du Pont organization, which has chosen a legitimate and efficient means of furthering its dye plans. This is amply borne out by Dr. Robert E. Rose, of the Du Pont Company, in a statement just published in which he declares that the two German dye experts were to be employed by the company "not because the American chemists feared inability to solve any special processes, but because they can by their assistance make a short cut to the remaining formulas that must be developed."

Such was the object in bringing them here, while the object of the German Government in crying "Verboten" to further importations of that kind is equally clear to all. Whatever some may tell you, Germany can and will remain able to smash the American dye industry if the latter is carelessly left within range by a negligent Senate.

DR. DUISBERG'S SLIP

It seems such a very little while ago that Dr. Carl Duisberg, managing director of Farbenfabriken vorm. F. Bayer & Co., was telling the world that Germany had no thought of making use of the dye industry in connection with her spirited defense against the onslaught of Belgium and other countries which basely attacked her in 1914, and that German chemists need not be seriously alarmed, in his belief, over the growth of foreign competition. We

remember remarking in these columns at that time—it was early in last November—that the best way to make him right was for the Senate to dally with the Dye bill a year or so longer.

Something, however, has since caused the worthy Doctor to change his tune, and the air he now sings at a meeting of the Union of German Dyestuff Manufacturers has no unpreparedness *motif* in it, but nevertheless is quite as plaintive. For reasons of his own, acquired no doubt because of the Light having burst upon him in a vision born of a quiet admonition or two from other members of the kartel, he now loudly proclaims the blackness of the German dyestuff manufacturers' outlook in view of the fact that the American dyestuff industry has been consolidated so that the "entire production, from that of coal to that of the dyes, has been united in one great trust." It begins to look as though word of

the merger which created the Allied Chemical & Dye Corporation had reached Germany!

Furthermore, Dr. Duisberg states, as quoted in a dispatch to *Drug & Chemical Markets*, "Competition will certainly be carried on to the knife, and will undoubtedly force German manufacturers to give up all hope of securing a market for a very considerable proportion of their output."

That is more in line with what we expect from you, Doctor; but—who told you to say it? How came your unguarded utterances of a few months ago? Ah, well, that part of it matters not so much; both your statements are on public record, and it is assumed that, like the cobbler, you prefer to stick to your last.

But that will be a bit difficult. Having once let the cat out of the bag, is it to be so easily recaptured and thrust back again? The world is prone to look askance at efforts of this kind, and it is quite likely that pussy, having received her passports and gained the sanctuary of these shores, can no more be seized again than your colleagues with the Du Ponts.

You know and we now that there is just one way of taking the American market away from the kartel, and that way is also known to a majority of the United States Senate. Pussy' presence here has already been observed by that body, and further attempts to retrieve her must certainly cause undesirable notoriety and comment. Better by far to remain consistent; let your original statement stand: "German chemists need not be seriously alarmed at the growth of foreign competition," adding always the qualifying clause, "if the Dye bill should fail of enactment."

Signs of resilience in textile manufacturing centers are indicated by a statement of the Japanese Department of Agriculture and Commerce, which notes that operations have been resumed by many manufacturers. Of 11 prefectures reported upon, there are only

one or two in which entire suspension of output is still prevailing, while but 10 per cent of the spindles in those factories where output is reduced are left idle.

THE DYE CENSUS

(Concluded from page 8.)

clearly, so that they may successfully defy the most ingenious lobbyist to twist them about, and for doing its best to call attention to the inner meaning of its statistical matter at a time when such attention is again so sorely needed. By its fairness and accuracy, the Commission has once more performed a real public service which, we venture to opine, considering the issues at stake, stands second to none in importance. And if it must be said that this body did no more than its duty, it is only right to add that many less adequately equipped in the matter of interpretive skill and technical knowledge might have bungled that duty in such a way as to work an irreparable harm.

DYES INSTITUTE RE-ELECTS 1920 OFFICERS

The annual meeting of the American Dyes Institute was held Friday, January 21, 1921, at the rooms of the Institute at 130 West Forty-second Street, New York City.

The old officers were re-elected for the ensuing year.

They are as follows: President, R. C. Jeffcott, of the Calco Chemical Company; Treasurer, H. E. Danner; Secretary, W. R. Corwine; Board of Governors, A. C. Burrage, Jr., Atlantic Dyestuff Company, Boston, Mass.; R. C. Jeffcott, Calco Chemical Company, Bound Brook, N. J.; Samuel Iserman, Chemical Company of America, New York, N. Y.; J. T. Pardee, Dow Chemical Company, Midland, Mich.; M. R. Poucher, E. I. du Pont de Nemours & Co., Wilmington, Del.; H. W. Hyde, Essex Aniline Works, Inc., Boston, Mass.; Dr. J. M. Matthews, Crasselli Chemical Company, New York, N. Y.;

August Merz, the Heller & Merz Company, Newark, N. J.; B. P. Donnelly, Holland Aniline Company, Holland, Mich.; S. W. Wilder, Merrimac Chemical Company, Boston, Mass.; F. L. McCartney, Monsanto Chemical Works, Inc. (New York Office); R. T. Baldwin, National Aniline & Chemical Company, New York, N. Y.; Dr. E. H. Killheffer, Newport Chemical Works, Inc., Passaic, N. J.; Frank Hemingway, the Sherwin-Williams Company, Cleveland, Ohio.

The Executive Committee consists of R. T. Baldwin, A. C. Burrage, Jr., J. R. M. Klotz (Newport Chemical Works, Inc.), J. M. Matthews, J. T. Pardee, M. R. Poucher, August Merz.

The usual reports were presented, approved and filed, and the next meeting will be held Friday, February 25, 1921, in the rooms of the Institute.

NEWPORT DISCONTINUES N. Y. OFFICE; WILL HANDLE BUSINESS FROM PASSAIC

The Newport Chemical Works, Inc., has discontinued its New York office, and all business heretofore conducted at this office will be handled at the general offices at Passaic, N. J.

The recently elected officers of the company are, C. N. Turner, president, Elvin H. Killheffer, vice-president, in charge of sales, J. F. Blackie, vice-president, in charge of operation, H. H. Springford, treasurer, R. W. Wilmer, secretary. Mr. Turner, president of the company, who was formerly located in Milwaukee, has moved his office to Passaic, N. J.

NOBBE GOES TO COMMONWEALTH

Paul Nobbe, who prior to January 1 had for several years past been vice-president of American Aniline Products, Inc., has severed his connection with that company and accepted the position of vice-president and sales manager of the dyestuff department of the Commonwealth Color & Chemical Company, Brooklyn, N. Y. Prior to his association with American Aniline Products, Inc., Mr. Nobbe was for

many years with the Bayer Company, both in this country and abroad, his connection with the dyestuff industry dating back to 1889.

Mr. Nobbe is unquestionably one of the best posted dyestuff men in the country to-day. His knowledge of type colors and of the individual requirements of large consumers is most extensive and his services should be of very decided advantage to the customers of the Commonwealth Company. In addition to his fundamental knowledge of dyestuffs and the American market Mr. Nobbe has also a very wide acquaintance with export fields and his familiarity with foreign markets will undoubtedly prove helpful in handling export business in his new connection.

A. D. I. NOW MEMBER OF INTERNATIONAL CHAMBER OF COMMERCE

The American Dyes Institute, in response to an invitation from the International Chamber of Commerce at Paris, France, made application for membership therein. The application was received and approved by the Chamber of Commerce of the United States of America which had authority to act for the new International Chamber of Commerce, but before membership could be perfected it had to be passed upon finally by the officials of the International Chamber in Paris.

In a letter just received from Mr. Edouard Dolleans, General Secretary of the International Chamber of Commerce, with office at 33 Rue Jean

Goujon, announcement is made that the election has been perfected and that, therefore, the American Dyes Institute is now a duly qualified member of that international organization.

BUTTERWORTH-JUDSON IMPROVES QUARTERS

The New York sales offices of the Butterworth-Judson Corporation are now located on the twenty-fifth floor at 61 Broadway, as the space formerly occupied on the thirty-second floor was not suited to the Sales Department office requirements.

In accordance with the policy of concentrating the executive interests at the works at Newark, N. J., the Accounting Department was moved to Newark last September, and later was followed by the Purchasing and Executive Departments, but the Sales Department remains in New York.

REINICKE NOW WITH THE BEAVER CHEMICAL CO.

Walter Reinicke, who for several years has been connected with the Excelsior Dyestuff & Chemical Company, has recently withdrawn his interests from this company and is now with the Beaver Chemical Company, 116 Wall Street, New York City.

This company produces the Sulphur Blue known as "B C Ex. Conc.," Alizarine Red Paste and Alizarine Blue. This last named color is dyed on chrome mordanted wool, and is fast to fulling and stands carbonizing. The shade is an excellent navy blue and is equal to the pre-war standard of the same type.

With a view to throwing intelligent and helpful light on the question of correct packing for India, attention is called by Vice Consul Thorling, of Rangoon, to a recent case which received the special recommendation of an Indian importer. A consignment of cotton blankets was packed in large square boxes, with strong wooden frame, the material of the boxes being

about one-third or one-quarter of an inch thick and laid in transverse layers, each one solid surface, whereby it was made impossible to open up a plank in the side and remove part of the contents.

POLAND TELLS AMERICA OF DYE AND INTERMEDIATE NEEDS

In its January issue, the *Journal of the American-Polish Chamber of Commerce* informs Americans in an interesting article that the Polish textile mills are badly in need of dyes and also materials from which dyes may be made, and that American dye interests have a great opportunity to capture the former German dye market in that country if they can respond to the demands.

While the Entente powers have already advanced far toward making themselves independent of German dyes and drugs, in Poland this problem is only beginning to be considered.

The chemical industry was little developed in Congress Poland before the war, due to the hostile attitude of the Russian Government. In Poznan and Galicia activities in this direction were in the main excluded by the policies of the German and Austrian Governments.

During the war the occupation authorities aimed at the destruction of what remained of the Polish chemical industry. On regaining her independence Poland found herself in dire need of dyes and drugs. Her highly developed textile industry required large quantities of dyestuffs and intermediate products, and to combat the maladies reigning in Poland as a consequence of the privations which the population had suffered, the need of medicaments was great.

DYE NEEDS OF POLAND

Polish factories are in immediate need of intermediate products sufficient for the production of 2,500 tons of dyestuffs. Poland needs:

(a) Prepared dyestuffs, which would

enable the textile industry to be put in full working order.

(b) Chemical-pharmaceutical products, the want of which is greatly felt throughout Poland, particularly in the eastern territories.

(c) A number of intermediate products necessary for restoration of Polish industry (tar by-products) which were either destroyed or requisitioned by the German authorities.

The list of yearly dye requirements of United Poland which follows was drawn up by the Union of Polish Manufacturers:

Cotton Dyestuffs	Tons
1. Direct dyes	1,970
2. Sulphur dyes	820
3. Basic dyes	66
4. Vat dyes	130

Total	2,986
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Cotton and Wool Dyestuffs	Tons
1. Direct dyes	526
Wool Dyestuffs	
1. Vat dyes	250
2. Acid dyes	1,100

Total	1,876
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GERMAN SUPPLY MORTGAGED

Total amount of dyestuffs required by Poland, 4,862 tons.

The purchase of these commodities at present rates of exchange presents great difficulties. Moreover, Germany, which seems to have the only exportable surplus in Europe, is on principle unwilling to supply Poland, owing to her obligation to sell dyes to the Coalition Powers according to the economic claims of the Treaty of Versailles.

The present is a most opportune time for American dye interests to enter the Polish field by establishing a factory in Poland to take advantage of the low costs of production. If the Germans are allowed to regain their former control of the Polish market it would be a difficult matter to oust them. It is a simple matter to forestall them by securing a firm hold on the Polish market during the next few years.

CHEMICAL PRODUCTS NEEDED

On a normal basis the Polish textile industry requires in addition to the principal dyes the following chemical products:

	Tons
Gum Tragacanth	100
Gum de Cordefana	50
Bleaching Powder	1,000
Sulphate of Soda (calcined)...	7,500
Caustic Soda	6,000
Carbonate of Soda (calcined) ..	3,500
Acetate of Soda	200
Bichromate of Potash or of Soda	600
Ferrocyanide of Potash or of Soda	100
Chlorate of Potash or of Soda ..	60
Cromium Acetate (dry)	20
Nitrate of Soda	50
Tannin	50
Double Salt of Antimony.....	50
Chrome Alum	250
Alum or Sulphate of Alumina ..	200
Hydrosulphite (for printing) ..	10
Bisulphite of Soda (dry).....	200
Bisulphite of Potash	500
Copper Sulphate	60
Sulphuric Acid	6,000
Hydrochloric Acid	2,000

Nitric Acid	50
Acetic Acid	1,000
Yellow Glycerine	40
White Glycerine	100
Stearine	20
Cocoanut Oil	500
Cotton Seed Oil	550
Castor Oil	450
Oleine (for soaps and softening)	3,300
Tallow	3,400
Cachou de Bambir ou Pegne...	20
Campeche sec American	200
Halmatine Crystals	100
Persian Berry	20
Aniline Salt	200
Quercitron Extract	100
Aniline Oil	20
Paranitriline	100
Beta-Naphthol	100
Alpha Naphthylamine	30
Sodium Sulphide	3,200
Sulphur	1,000

HAS AMERICA NO ANSWER FOR THIS GERMAN THREAT?

A Contemporary's Thoughts on Our "Approaching Disarmament"

The REPORTER takes more than ordinary pleasure in presenting this week the editorial which appeared in the *Manufacturers' Record* of January 13 under the above heading. It seems to us to be one of the most satisfyingly complete and final statements of the present situation with respect to the American dye industry and Germany which has come to our attention in some little time. We hope that readers will not fail to note the manner in which the Paris dispatch quoted therein bears out that part of the report of E. S. Chapin in which he tells of the Germans' reluctance to make and sell dyes not manufactured here, and of their eagerness to produce competitive dyes; and that they also will not fail to note the attitude taken by the writer toward those who have sought to delay passage of the Dye bill by taking advantage of every possible technicality. This attitude is clearly shown by a sentiment which has often before appeared in these columns, and which we are glad

to see here again, namely: "Men who shape their course in Congress so as to support a policy obviously beneficial to our enemies and destructive to the United States necessarily are objects of suspicion."

Quite so, and this would apply most particularly to Senators Charles S. Thomas, of Colorado, and George H. Moses, of New Hampshire. There are others, it is true, but these two have stood forth prominently as leaders, and there is no use mincing words in speaking of their actions in this matter of the Dye bill. One has no real proof as to what their real motives may be, nor as to how far the truth of the dye situation has penetrated their understanding; it may be that "they know not what they do." But one can say with certainty that if they were bent on doing their best to betray America into a state of pitiful unpreparedness, they could scarcely act otherwise than as they have toward the Dye bill. The editorial follows:

While men talk about disarmament and fill the newspaper columns with learned discussions as to the wisdom of curtailing our naval program by international agreement, hour by hour the day of our real disarmament approaches so stealthily the great public is in entire ignorance of the fact.

In the next war leaders will laugh at battleships and artillery when they launch their assaults of poison gas and invisible destruction. The machinery of warfare has passed into the hands of chemists, and the soothsayers in predicting results, will look not to stars or entrails but into the test tubes of the laboratory.

An inkling of the truth may be obtained from a cable dispatch, written by Wythe Williams, which appeared in the *Washington Herald* of January 10. We quote from it:

"There is evidence in Paris, where a large force of dye experts now are gathered to help the reparations commission, that the German dye attack is to be centered most vigorously upon the United States market. France has a

tariff law that enables her to build up her dye industry unmolested. England has a new law, operative January 15, that excludes dyes such as she produces and admits those she does not produce, but which her consumers need. Japan is taking steps to protect her chemical industry. The United States is the only important nation actually at the mercy of German chemists. For the moment America is protected by the War Trade Board, but this barrier will fall when she ends the technical state of war with Germany.

"German dye manufacturers, realizing this, are causing the reparations commission much trouble by refusing to produce, except under pressure, the dyes most needed in the United States. They are willing to offer large quantities of dyes in competition with the output of the new American dye industry, but still are making excuses for failure to non-competitive dyes. Thus they hope to encourage consumers to demand an open market. Also, in this manner, with the experience of her 50 years' world monopoly of dye manufacture against five years of American experience, Germany hopes to throttle the American industry and leave America helpless in this respect, should there be another war.

"German production of dyes is so closely allied with her production of munitions that a separation is impossible. Destruction of one would mean the destruction of both. Students of the German proposals now in Paris consider that America is the last hope the German manufacturers have, and they will not give up as long as America does not protect its dye industry by a law similar to that of Great Britain. They see, further, that real chemical disarmament can be accomplished only by breaking Germany's monopoly of the dye industry and encouraging the building up of a similar industry in all the countries of the entente, and especially in the United States."

It is the absolute truth that the "United States is the only important nation actually at the mercy of the German chemists."

The War Trade Board, which now protects the American dye industry, will go out of existence March 4, unless funds to finance its activities are provided, and it will go out of existence anyhow so soon as peace is concluded. The dye industry, therefore, is nearing hour by hour the day when it will be at the mercy of the Germans. They will not be long. Private industry does not possess the power of taxation and cannot long stand up under heavy financial losses. If there is no inhibitory legislation, enough dyes can be dumped on our shores within a few months to swamp the market.

It is difficult to speak with moderation of those Senators who have resorted to the filibuster and every other technical device of legislators to delay and prevent enactment of the Dye bill. Be their motives what they may, the fact remains that their course is exactly the course that is most acceptable to the Germans. There is no one thing Berlin more desires than the failure of the Longworth bill. Men who shape their course in Congress so as to support a policy obviously beneficial to our enemies and destructive to the United States necessarily are objects of suspicion. Men are judged not by their motives but by the things they do, and when the things they do are fatal to the future well-being of their country, they must expect criticism. This is more than ever true when they obstruct the majority and employ their technical power of delay to prevent an enactment favored not only by the House of Representatives and recommended by

the President, but also favored by a large majority in the Senate itself.

There is history back of this entire situation. The statesmen who went to Paris to write the Peace Treaty were well aware that a mere physical disarmament of Germany would be a grotesque provision against the later attack by that nation. They favored not merely the destruction of the German navy and the disbandment of the German army, but they also expected to compel the Germans to disclose their chemical secrets, vital in warfare, and the dismantlement of huge chemical works was contemplated. This essential and wise course was prevented by President Wilson, who advanced the idea that the Allies and the United States could adequately protect themselves by building up their own chemical industries, shutting out the German product. He favored compelling the Germans to disclose their chemical secrets, which they have not done, but he wanted each individual nation to protect itself.

That is what all of the chief Allies and neutral nations have done—all except the United States. Over in England the Government listened to all the arguments against protection of the British dye industry and then promptly enacted, last month, the most drastic sort of legislation to assure absolutely that the German chemical industry would not ruin that of Great Britain. She carried out the understanding that had been reached in Paris. It is more than passing strange, however, that every effort to carry out the same understanding in the United States has been prevented by filibusters or threats of filibusters in the Senate. It is amazing, but it is true.

It is a fact that the Germans have not yet yielded up their war method of extracting nitrogen from the air. The methods we have are obsolete, and we know it. But the final Haber process we have not got. It will be got, in one way or another, but it has not yet been got.

If gentlemen wish to continue the argument on the Dye bill let them do so, but not with the gates open. The bar-

riers must at least be kept up until a definite decision has been reached. This can be done by passage of a joint resolution extending the authority of the War Trade Board and providing funds wherewith to support it. The Longworth bill itself ought to be passed. It is the sensible and proper course. But, failing that, the next best course is emergency protection of the chemical industry pending a final decision by the next Congress on a definite national policy.

The absolutely essential character of the dye industry in relation to national defense is not a question of conjecture or of theory. It has been demonstrated with mathematical accuracy, and it can be so demonstrated at any time, before any committee or any jury. Indeed, it is admitted even by the opponents of the Longworth bill. They claim, however, that the industry can be protected adequately by tariffs. The facts are all against them. Tariffs are for honest men, in pure commerce. Control of the American dye market by the Germans is not inherently a commercial undertaking at all. Germany can afford to give away dyes in America if by so doing she can destroy the American dye industry. Dyes, with her, is preparedness for war. Dyes, with us, can be nothing else.

We would be safer without a gun factory in the nation, a powder plant or a warship than without a chemical industry and a chemical personnel equal to any others on earth.

Under the laws of Massachusetts, the Marble-New York Company has been incorporated with a capital of \$400,000 to deal in heavy chemicals, starches, oils and mill chemical supplies, and dyes. Headquarters will be in Worcester.

Under the laws of New Jersey the Gem Dye Works has been incorporated with a capital of \$10,000. Headquarters will be in New York City, and the incorporators consist of S. E. and F. Friedman, and H. Klein, 230 East Eighth-fourth Street.



AMERICAN DYESTUFF REPORTER

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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

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No. 5

MR. CARTER TO THE STAND!

A Type Sample of Testimony Against Licens-
ing Subjected to Analysis and the Like o' That

WITHOUT specimens for observation and data for study, science could make no headway. Before the knowledge necessary to the accomplishment of a given end can be gained, whether that end be the elimination of an evil or the creation of an aid to mankind, a thoroughly typical instance or portion of the matter or substance under investigation must be chased into the open, so to speak, captured, and submitted to close scrutiny leading up to definite conclusions. Thus the chemist requires his sample for analysis and the stock broker calls for his graphs and charts. And when a group of medicos set out to conquer a malady like *encephalitis lethargica*, the orthodox caper is first to isolate the germ.

That is why The REPORTER takes so much pleasure this week in submitting for the examination of its readers a sample of bona fide opposition to the Dye bill. By "bona fide" we mean that of an "insider"—of one connected with the dye or an allied

industry—in contrast to that of a lay commentator who has no stake in the proceedings—or who thinks he has none, which amounts to the same thing for all practical purposes. A very great deal of the opposition to the Dye bill consists of what magazine writers refer to as "veiled" opposition, for excellent and easily understandable reasons. It is whispered and wafted about by lobbyists at Washington. A large proportion of the balance is lay opposition in the daily and weekly press, and must be discounted, as almost anyone will agree, because the great majority of the writers haven't the remotest idea of what the Dye bill says and does not say, nor of the real issues involved, and view the whole matter somewhat vaguely, as a sort of blanket embargo, through glasses colored by whatever free trade or protectionistic beliefs they may happen to harbor. In other words, these gentlemen look upon the measure from a political angle and regard it as a tariff issue.

But the remaining opposition comes from those who should be in a position to have all the facts, who should be able to foresee the inevitable outcome of what they preach, and who stand to gain or lose in a business way according to the final decision rendered by the Senate. For this reason it is the only opposition worth studying. As it is the least plentiful of all three classes, good specimens are not often to be obtained; hence our gratification at being able to submit a sample from Charles B. Carter, secretary of the National Association of Hosiery and Underwear Manufacturers. And we are sure that from reading what Mr. Carter thinks of the license system you will get almost the same thrill that you get from devouring the magazine advertising pages to find out what George Creel thinks of Pelmanism.

It is a brand-new publication—which we incidentally welcome to the ranks and will have more to say about in another issue—which gives Mr. Carter's views to the trade, and its name is the *Textile Digest*, the number is Volume I, Number 1, and the date is January, 1921. The first issue carries no less than three articles dealing with the dye question, two of them excellent contributions by Daniel F. Waters, president of the Master Dyers' Association, Philadelphia, and Edwin F. Slosson, author of "Creative Chemistry," well known for his simplification of technical matters for the consumption of the lay reader, in which line of endeavor both he and Ellwood Hendrick have achieved notable successes.

The *Textile Digest* itself apparently takes no definite stand on the question of licensing dye imports to the United States, but lets its contributors speak freely according to their lights. Messrs. Waters and Slosson favor the Dye bill, while Mr. Carter opposes it; and what we should like to do would be to reprint all three articles and let you judge for yourself as to which side establishes the

better case. Space, however, will not permit this; but before plunging into the Carter article we wish to warn you that the writer contributes nothing new to the cause which he espouses, nothing which has not been dealt with time and again in these and other columns—with one glittering and awful exception! That exception—but wait! Let Mr. Carter take the floor, and we shall strive to interrupt him as little as possible.

As a maker of paradoxes, either he or the editor of the new publication gets away to a running start in the heading, which reads: "Protect Our Dye Industry, but Discard License System." However—

"Give us protection for the dye industry, but do away with the license system," begins Mr. Carter. "There may be German dyes that we need and we should not be handicapped in our efforts to compete with other countries in the markets of the world. Give us more business in government and less government in business."

To put it somewhat crudely, Mr. Carter ought to know darn well that there *are*—not "may be"—German dyes that we need, and need badly and will continue to need until American manufacturers are producing them; and he ought likewise to know, in case he doesn't, that the license system was especially devised to let us have them without the payment of the 1,100 per cent duty which Mr. Slosson figures it would be necessary to impose before we could even overcome the disparity in currency values, to say nothing of the additional charges which would have to be made before we could have a "protective" tariff.

"The practical application of the Longworth bill, should it be enacted into law," continues Mr. Carter, "will be to create an absolute dye monopoly in this country which will fatten," he says, "first, on all of our American industries that are users of dyestuffs, and, secondly," he concludes, with a burst of patriotism, "on every user and consumer of dyestuffs, from the

buyer of a nursery rag doll to the purchaser of an American flag."

Pausing only long enough to conjure up a vision of the German monopoly fattening on the purchasers of American flags, we again withdraw from the picture to let Mr. Carter remark:

"The report of the official representative of the Textile Alliance, which body bears an official relation to the War Trade Board, conclusively shows that there are no accumulated stocks of dyes in Europe, either in Germany or in any of the other countries; and that only a small fraction of the needed dyes to be allotted under the Treaty of Peace, and to be bought for the United States in addition to the allotment under the Treaty, are obtainable; and that there is no indication that a change will be made in these conditions for an indefinite length of time."

Again pausing only long enough to point out how anxious (?) Germany is to spread the impression that she will be able to flood American markets just as she did the British markets until the British put a stop to it, and how likely (?) a chance there is that there *will* be any indication of Germany's actual dye-producing strength until after the Senate has decided what it will do with the Dye bill, we hasten on to the really startling and novel portion of the argument which Mr. Carter essays to build up against the license system—the leading exhibit of his whole chain of "evidence." Sit tight and hold your hat; we're off:

"The passage of the dye licensing bill by the United States Government would result in our own country being *the only Government establishing dye restriction*,* just as by the refusal of the State Department at the present time to license the general importation of dyes we are the only country now unable to secure necessary foreign dyes.

"If the users of dyestuffs in the

United States," Mr. Carter goes on to say, "are denied access to purchase in the free markets of the world because of a dye licensing barrier it will result in all of their products being handicapped in competition for the trade of the world in both foreign and domestic markets.

"The method of restricting commerce by commissioners empowered to lay the heavy hand of favoritism and inertia on business is an unprecedented experiment in American methods of government and utterly uncalled for by any economic or industrial conditions, and wholly foreign to the fundamental basis of all American institutions.

"According to the *London Times*," continues our informer, triumphantly, "importation of synthetic dyestuffs from any foreign source to the United Kingdom is free and unrestricted, and it is stated England is relaxing conditions requiring manufacturers' certificates in the case of exports of dye-

*The italics are ours.

stuffs, of which, it is represented, 'there is no shortage.'

"It may be well to bear this in mind," he adds, pursuing the argument to the bitter end, "when next the proponents for a system for licensing dyes for import into the United States go before Congress with the emasculated, revised and amended Longworth bill, which would impose on American consumers of dyestuffs restrictions which England is reported having removed.

"Unless imported dyes 'from any foreign source,' " he concludes, "shall be permitted to come into this country, under a proper tariff for protecting domestic manufacturers, as freely as they are permitted to flow into England, textile manufacturers here will be at a serious disadvantage in competing with our cousins across the Atlantic, and industry and labor will be adversely affected."

We should like to have interrupted Mr. Carter and offered him a contest on every paragraph—on almost every line—of his production; yet in all sincerity we must say that to have done so would have used up more space than we have at our command, and in addition would have subjected our readers to wearisome re-statements of facts which have appeared in these pages many times before. We are sincerely sorry for Mr. Carter, for we know that his task of constructing any sort of an argument against the adoption of the licensing system was an extremely difficult one and that, had it not been for his truly marvelous lack of information as to the provisions of the Dye bill and conditions here and in England at the time when his article was prepared, it would have been an impossible one.

We should like to have gone into the question of monopolies with him, and into the Chapin report, which he presumably refers to. Yet this has been done before; they are merely stock arguments, to be disposed of this time by the audience without our intrusion.

Outside of these points, however, it will be observed that every other conclusion drawn by Mr. Carter is based upon the assumption that Great Britain, France, Japan and other nations are allowing free and unrestricted importation of all foreign dyestuffs. Upon that assumption depend his arguments to the effect that we should be the only government to take such action, that Americans are to be hampered by restrictions not placed upon their British cousins, and that American manufacturers of textiles would not have an even start with those of other nations so far as dyestuffs are concerned.

We are moved—as many will be—to recall the historic tactics of Abraham Lincoln when, as a young lawyer, he volunteered to defend an acquaintance against a charge of murder. The prosecution, unlike the Dye bill opponents, had a very strong case and numerous witnesses, but placed their principal reliance on one in particular who saw the crime committed. The case hinged upon the identity of the slain man's assailant, and Lincoln let all the other witnesses for the prosecution retire from the stand without cross-examination. When the star witness appeared, however, Lincoln uncoiled his great length from the depths of the chair in which he had reposed throughout the trial, and after the District Attorney had finished, began to question him. The witness repeated his declaration that he had distinctly seen the prisoner strike the fatal blow by the light of a bright moon. Again and again Lincoln made him swear to this, until it seemed as though he had damned his client's case for good and all. Then, turning to the jury, he carefully extracted a battered almanac from his hip pocket, and marking the place with a bony forefinger he gently indicated to the twelve good men and true that there had been no moon whatever on the night of the murder! Needless to

say, the case for the prosecution collapsed with suddenness.

Now we find Mr. Carter, seeking to discredit the licensing system, putting forward as his most telling argument against it the "fact" that England rejected it and was determined to maintain the utmost degree of freedom in her trade with foreign dye manufacturers. Yet some days before his article made its appearance in print, England had enacted one of the most stringent laws regulating the importing of foreign-made dyes which could be devised—and a law which not only will be in effect seven years longer but which is in many respects less satisfactory to dye consumers than the one embodied in our own Dye bill!

This was, apparently, the best argument against an American dye licensing law which Mr. Carter could dig up! Even had he prepared his article before the enactment of the British measure—which passed the House of Commons, by the way, in the middle of December—he had only to read the *London Times* as assiduously as he strives to indicate, in order to learn that general sentiment in England was anything but favorable to unrestricted imports of German dyes at that time, and that the Sankey decision was all that stood in the way of enforcing another prohibiting law passed more than a year before. He could not have failed to learn that there was no sentiment for "relaxing," and indeed, had he given some attention to our own *Times*, published in New York City, he would have learned almost immediately of the passage of the British measure. In the face of this obvious lack of authorita-

tive information, what is to become of the rest of his testimony?

And the conclusion? This, which has been stated here before: Wherever you find *honest* opposition to the Dye bill you will also find ignorance of the provisions of that measure, or of the true role of the coal-tar chemical industry—or of both!

ANOTHER "PERFECT SUBSTITUTE" FOR COTTON

From the *Textile Zeitung* comes a description of a new method of preparing wood fibers for spinning, which is said to produce "a perfect substitute" for cotton.

"Instead of attempting to preserve the best fibers in their full length for spinning as a substitute for long-fiber textiles," it reads, "the fibers are separated into their original cells, varying between 20 and 50 millimeters in length. In the separation process the dried material is soaked in a weak acid solution, as a result of which part of the encrusting matter is carried off in solution. The remaining part is easily soluble by the next process, which consists of handling the material with alkali solutions for between six and twelve hours. By this process the long fibers are separated into their short, elementary cells. As, however, after drying, the cells again stick together, and, as washing only partially prevents this, they are put into an 'isolation solution' of fatty acids or amides thereof. After this process, the cells dry in a condition which makes sticking together impossible, yielding a soft, strong material, which can be easily spun by the cotton spinning, three-cylinder system."

AMERICAN DYESTUFF REPORTER

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 of the American Dyestuff Industry Unbiased
 contributions appreciated.

A. P. HOWES, President
 LAURANCE T. CLARK, Editor

NO COMPROMISE!

You are asked to consider the following, from a recent issue of the *American Economist*:

"Textile manufacturers have with practical unanimity professed themselves as willing to have any rates of duty which the dye manufacturers demand imposed upon foreign dyes so long as the users of such dyes are permitted to exercise their option to import them, notwithstanding the high rates of duty, without the interference of any licensing organization. They prefer to use domestic dyes when they answer the purpose, but they do not wish to be deprived of the privilege of using foreign dyes if the domestic ones do not answer the purposes of the users. Of this and of the quantities which they may import they want to be the sole judges, without being subject to the restrictions, not to say the caprice, of any licensing body.

"Nor are the textile manufacturers of this country alone in their opposition to the licensing system or to an embargo. The British textile manufacturers have found from experience that the licensing system has given rise to a great deal of abuse and has deprived them of the use of needed dyes."

The above editorial was reprinted by a New York newspaper in connection with rumors from Washington to the effect that the dye manufacturers are willing to compromise with the opponents of the Dye bill, and to accept something less than the protection offered by that measure in order to secure immediate action. Some of the most vig-

orous anti-licensing representatives of the textile trades are also rumored to be willing to waive some of their claims and frame a substitute measure satisfactory to both parties.

There used to be talk of that kind every once in so often when the Dye bill first came up before the House in the Spring of 1919. And again The REPORTER can only say that if there is really a second Solomon lurking in the background somewhere with the draft of a bill that will really do the trick—will really preserve the dye and allied industries intact for America—then let him step forward and straightway become one of the immortals; he will have earned at least three niches in the Hall of Fame and all his relatives will be entitled to make the next edition of "Who's Who." But if there is no such person or measure, let all others hold their peace and give that Senate majority one more chance to shake off the filibusters. Anything less than the protection offered by the Dye bill simply isn't protection. Any weakening or any indication of weakening on the part of the dye manufacturers at this juncture would be letting every inch gained so painfully and laboriously during the past twenty months slip away, together with all chances of regaining the lost ground.

The proposition of the dye industry is right, sound and not in any way inimical to the interests of the textile or any other industry, while the alternative, Government subsidy, is wanted by none. There is no talk of "economic" factors in the recruiting and maintenance of an army, and neither are questions of economic policy applicable to the coal-tar chemical industries, yet the latter offer an army which becomes an economic asset instead of a perpetual economic liability which must annually be written off by the country. Moreover, by failing to provide the coal-tar army, the investment in the human legions simply becomes so much money thrown away, for all the good it could ever do when defense was needed.

Whether the British textile men have trouble with licensing or not, they evidently prefer it to what was taking

place when the measure was passed. Likewise, some of their own number serve on the licensing commission, which is something neither wanted here nor provided for in our Dye bill. Finally, the idea that textile manufacturers would be subject to the "caprice" of the Tariff Commission under the proposed law may sound plausible enough to impress anyone who reads it over quickly and thinks superficially about the Dye bill, but when the bill is carefully read the downright absurdity of any such term becomes plain. No "abuse" of the licensing feature of the bill, whatever may have occurred in England, can happen here. The Tariff Commission is obliged to work in the open, has no favorites and nothing except its honor at stake, and members of it realize that if they should not be just to all and do their best to facilitate the handling of orders, Congress would act quickly to place control in more capable hands.

There must be no talk of compromis-

ing at this time; it would please those who would like to see America helpless before an enemy in future years, amuse England, and, in short, spill the beans so everlastingly that they could not be gathered up again. And the country at large, including the textile industries, would assuredly be done a great harm thereby.

TEXTILE ALLIANCE REFUNDS \$563,000 UNEXPENDED BAL- ANCE TO DYE CONSUMERS

The Textile Alliance, Inc., last week mailed checks amounting in the aggregate to \$563,221.29 covering the first refund due to consumers for whom the Alliance imported dyes under the so-called "Herty Option" and from the first importations of Reparation dyes. The following explanatory letter was sent to recipients of the checks:

"GENTLEMEN:

"In securing for you the German dyestuffs which became available to

American consumers through the original Reparation and so-called "Herty Option" sources we estimated the cost of the dyes including charges incidental to complete delivery in New York and made a separate charge of 15 per cent to cover the estimated expenses which might be incurred by the Textile Alliance, Inc., in connection with the purchase, importation and distribution. It was understood that any unexpended balance of the funds remitted by you for these charges and expenses would be returned to you in a pro rata distribution of such funds.

"In accordance with the above understanding and as authorized by a resolution of our directors, which resolution has been approved by the Dye Advisory Committee of the War Trade Board Section of the Department of State, we are now enclosing you our check which represents your pro rata share of this unexpended balance of the funds you remitted to us for such charges and expenses of the dyes to October 31, 1920. We have retained a sufficient sum to provide for the liquidation of these transactions and for the payment of any additional charges which may accrue and be at a later date presented in connection with the performance of these services. We shall at a future date refund any unexpended balance of fund we are now retaining

"For the purpose of making this refund the accounts of the Alliance have been audited by the firm of Barrow, Wade, Guthrie & Co., public accountants appointed by the Dye Advisory Committee of the War Trade Board

Section, and approved by a representative appointed by the Department of State. Should this statement not be satisfactory to you we will exhibit to your duly authorized representative the auditors' certificate and explain to him the methods used at arriving at the refund."

BARRETT CO. REORGANIZES WITH \$48,000,000 CAPITAL

Simultaneously with the announcement of the incorporation of the Allied Chemical & Dye Corporation, came the virtual reorganization of the Barrett Company by the election of new officers and directors. The papers of incorporation as filed with the Secretary of State show that the capital is 48,043,665, divided into 373,264 share of preferred stock at \$100 each, and 2,145,455 shares of common stock of no par value. This capital is the active capital. Those named are W. H. Nichols, Jr., W. H. Childs and O. F. Weber of 21 Burling Slip.

Eversley Childs, Chairman of the Board of the Barrett Company, and William Hamlin Childs, President, offered their resignations. William N. McIlravy was elected Chairman and Thomas M. Rainhard President. William Hamlin Childs was elected Chairman of the Executive Committee.

The following Directors of the company presented their resignations: Harry W. Croft, J. H. Fulton, William S. Gray, Alexander C. Humphreys, Isaac B. Johnson, Powel Stackhouse, Hamilton Stewart, J. Harry Staats, H. D. Walbridge and Horace S. Wilkinson. The following Directors were elected: E. L. Pierce, President Solvay Process Company; W. H. Nichols, Jr., President General Chemical Company; Orlando F. Weber, President National Aniline & Chemical Company; Walter B. Harris, Sales Manager the Barrett Company; M. H. Phillips, New York Manager the Barrett Company; D. W. Jayne, Manager Chemical Department the Barrett Company; Clark McKercher, General Counsel the Barrett Company; E. J. Steer, Secretary and Treasurer the Barrett Company.

N. Y. TEXTILE SCHOOL OFFERS COSTUME DESIGN COURSE

The New York Textile School, 124 West Thirtieth Street, is offering a costume course which promises to be one of the most complete and effective in the city. It will be under the direction of Miss Claire Henway (formerly instructor of fashions at the New York School of Applied Design for Women and of costume design at the Harlem Evening High School for women) and of Charles Kaplan (formerly instructor of costume design at the Brooklyn Vocational School).

The course is so planned as to come under four general heads, arranged so that a student may progress in all four branches at once, but no student will be required in repeat work already successfully completed.

The four classes comprising the course are:

1. Class in Textiles.—This includes a practical knowledge of textiles used in the women's wear industry. A student completing this work is expected to know the construction, qualities and best uses of dress goods, trimmings, laces, etc.

2. Class in Sketching and Costume Design.—This covers such subjects as the construction and action of the human figure; standard measurements; the effect of lines on the figure; purpose, season, age and personality in relation to costume; suitability of materials; sources of dress design (including historic costumes and museum work); forecasting fashions; children's costumes; stage and pageant costuming.

3. Class in the Practical Work of Costume Making.—This includes pattern making from sketches, pattern grading, cloth cutting and layouts, draping and sewing. The student is thus enabled to produce a complete garment of original design.

4. Class in Costume Illustration.—This gives a thorough knowledge of the costume in detail, together with the theory and technic of illustration; the drawing of various textures; methods of reproduction; types of illustration for dressmakers' sketches, newspaper

drawings, advertisements, catalogues magazines and fashion-plate work.

Color is studied in connection with all four courses. The classes are open to students of both sexes who have completed two years of high school work or the equivalent, or who pass a satisfactory entrance test.

"OUR DYE INDUSTRY MUST NOT DIE"

The following editorial, which appeared under the above heading *Leslie's Weekly*, is of interest as showing that some members of the lay press, at least, are beginning to wake up. The situation is stated in a way permitting no misunderstanding on the part of the consumer reader, and the language is so concise that it cannot fail to "get over." The editorial follows:

"Give the American business man an even chance and he can more than hold his own against the world's competition. For years he has had to work under the handicap of governmental indifference, governmental restraint, governmental opposition. Other governments co-operate with business interests, protect business as a national asset. They proceed on the sound theory that when the nation's great industries prosper, the whole country and all the people share in that prosperity.

"The time has come for America to change its policy. Our new dye industry, created out of the exigency of the war, furnishes occasion for adoption of a more patriotic policy toward industry. Before the war we relied upon

Germany for dyes. Her sway in this industry was nowhere seriously disputed. When in a twinkling of an eye Germany turned dye works into TNT plants, the eyes of the world were opened to her foresightedness. The United States had then about \$50,000,000 invested in the dye industry. We now have about 100 concerns with capital approximating half a billion dollars.

"Germany is stocked up with dyes and prepared at any sacrifice of price to regain her old mastery in world trade. The only thing that protects our manufacturers from a flood of Teutonic dyes is the power of the War Trade Board under the trading with the enemy act. As soon as the war is declared at an end and the control of the War Trade Board ends, our dye industry will be unprotected from the Germans.

"When the formation of a new chemical combine in the United States was announced in Great Britain, within twenty-four hours the Government had introduced a bill to subject all dye imports for ten years to licenses under a board composed of representative makers and users of dyes and the general public.

"The Longworth bill which would prohibit the importation of dyes for three years has already passed the House and should speedily be passed by the Senate. At the end of three years our manufacturers will be so well established that they will need only an adequate tariffs protection to meet foreign competition from any source."

N. C. TEXTILE SCHOOL SENIORS TOLD OF OPPORTUNITIES

Members of what will be the largest class ever graduated from the North Carolina Textile School, a department of North Carolina State College, Raleigh, N. C., were recently addressed by L. W. Clark, general manager of the Carolina Cotton & Woolen Mills Company, located at Spray and Draper, that State. The speaker had for his subject

the opportunities which to-day await young men with technical training in the textile and allied industries.

The mills under Mr. Clark's supervision are controlled by Marshall Field & Co., which also controls other mills at Fieldals, Leaksville and Virginia, N. C., and the North Carolina Textile School announces that David Lindsay, a graduate of that institution, is superintendent of the mill at Fieldale while another graduate is assistant manager of one of the plants at Spray.

PREVENTION OF TARNISH IN TINSEL SILK

The use of tinsel silk—that is, silk brocades woven with metal threads for gowns, evening wraps, linings and upholstery—has been increasing steadily for the past few years, until to-day no costume or drawing room is complete without its gleam or metallic silks.

Leaving out of account the Oriental tinsels, which are not made of metal thread but of gold and silver colored paper, until recently France has practically monopolized the American market. But of late, the extremely high prices asked for these imported goods have tempted a number of American manufacturers to venture into this field.

One great disadvantage suffered both here and abroad is the loss sustained from tarnishing. Regardless of how carefully the finished product may be wrapped in black or waxed paper oxidation of the metal thread frequently occurs and destroys the brilliancy of the brocade, and its commercial value. Not long ago one large producer abandoned the weaving of tinsels on account of this loss from tarnish. Therefore it is proving of vital interest to present and potential tinsel silk producers to know that a process has been perfected which absolutely prevents tarnish.

The Atlantic Chemical Company started eight years ago to tarnish-proof gold, silver and brocaded metal cloth for evening slippers, and have developed a successful monopoly in that field. Recently they have increased their facilities, and are now applying

their process to all classes of tinsel silks, laces, ribbons and embroideries. It is a chemical finishing process, secretly applied at their own factory, and is only available for goods that have not already tarnished. The process does not restore lost luster, but on goods partly tarnished it arrests the oxidization and prevents further discoloration. A noteworthy fact in this connection is that while the metal thread is rendered immune to oxidization by the treatment, there is injurious effect on the texture or color of the silk—*Textile American*.

Dye-a-Grams

Thanks be, we have all had our last Burlesonian Christmas!

—o—

One gathers from reading the daily papers that a lot of folks endeavor to keep their homes warm by heated argument.

—o—

Headline: "Normalcy in Cotton." All we want to know now is, what it is that's got into wool!

—o—

One often reads the phrase, "Ponzi's creditors." Polite way of dodging the use of the word "suckers"!

—o—

If business keeps on the way it is, there will soon be room for Charity to cover a multitude of shins!

—o—

Headline: Fortune Found in Dead Man's Boots." Most anyone can guess what *his* vocation was!

—o—

When business is slack and plants are curtailing, we cannot help but notice that it is not always the largest plant that has the best equipment of brains.

—o—

Advertisement: "Your Costume Speaks for You." Must be more women of few words than we had any idea of!

—o—

Answering "M." and "E. P.": We are quite unable to explain satisfactori-

ly to you wherein the squeak in a wooden leg is detrimental—and still be allowed to edit this column!

G. E. T.

"GAS AND DYES"

We call our readers' attention to another recent and praiseworthy example of lay editorial interest in the present situation confronting the American dye industry. This example appeared under the above heading in *Harvey's Weekly* and it is to be noted with satisfaction that the paramount issue in this controversy—the military significance of the dye industry—is at last beginning to worm its way into public understanding. The utterances of Senator Knox referred to in the editorial, which were given to the press on Christmas day, have already been commented upon in similar vein early in the present month in *The Reporter*, but the writer of the following, it will be seen, has allowed himself to slip into the popular error that a tariff will assure the protection he seems so anxious to endorse. Nevertheless, in linking the dye industry so unmistakably with preparedness he has done well, and we reprint the editorial herewith in full:

As Senator Knox has pointed out, it is not merely to build up an American industry, which Congressman Longworth recently described as "in its swaddling clothes," that the dumping of German dyestuffs on our market should be headed off. The commercial feature is only one side of the dye ma-

terial question. There is another side, and one that goes to the heart of our preparations for national defense.

That poison gas will be one of the deadly weapons of the next war is not to be doubted. Our own military experts, as well as those of Great Britain and France, fully recognize the fact. It is in dyestuff plants that these gases are most readily made. Fifty per cent of the shells in the German ammunition dumps captured at the close of the war were charged with poisonous gases. Germany had had for year a practical monopoly of the dyestuff industry. It was her equipment with these dye plants which enabled her to keep ahead so long in the poison gas supply.

In this country and in Great Britain, such plants had to be built. They were built. And now that at last we have them, now that finally the equipment for a full future supply of this war weapon is in our hands, surely it would be a fatuous thing to sit idly by and see this equipment reduced to a scrap heap by unrestricted German competition. For our national safety, in sheer military self-defense, we cannot permit this. Our domestic dyestuff industry must be protected, and protected to the point where ruinous foreign competition is made impossible.

Aside from the matter of self-defense, there is the further fact that with the impetus that the war has given to dyestuff manufacture here, we are on the broad highway to the creation of an American industry of vast potential value. As Senator Knox says, the possibilities of American dyestuff manufacture are enormous. He continues:

"Conservative estimates show that a billion dollars are wasted annually in the gases which flow into the air from our coke ovens. In Germany not a cubic foot of that gas would be wasted; it is all utilized in by-products from which dyes, drugs, and other chemicals are produced. It is folly for us to endure that great waste.

"Once the dye industry is established in the United States, beehive ovens will be supplanted by by-product ovens, and the billion dollars now wasted each year

will be conserved for the use of the human family."

The stock of German dyestuffs accumulated as the result of war embargo is enormous. It is a flood which, once let loose, will sweep our present feeble dyestuffs industry, even though we have invested \$100,000,000 in it, into mere driftwood wreckage. There is but one way to avert the disaster: a tariff wall so high that only a harmless trickle over the rim will be possible—that will do it. That, beyond all doubt, is precisely the kind of a dam that Congress will speedily build. Over that item in the forthcoming tariff revisions we can conceive little room for controversy.

IMPORTS OF BENZIDINE INTO GREECE

Consular advice from Athens states that about 20 tons of benzidine are used annually in the Athens consular district. Dry base is the only kind used, and there is no demand for base paste or sulphate paste. Benzidine has been imported in the past from American and German firms. It is said that recent importations from the United States have not been altogether satisfactory. Concerns dealing in this material should submit samples. The name of a concern in Athens that deals in this product can be obtained from the Bureau of Foreign and Domestic Commerce by referring to file No. NE-26.

NEW WORKING CONDITIONS DEMANDED BY ITALIAN TEXTILE HANDS

The Italian Federation of Textile Operatives, an organization taking in more than 500,000 workers in the cotton, linen, jute, and hemp industries, has proposed the denunciation of the existing agreement with the employers. A new agreement is called for embodying the following demands of the workers' association:

1. The opening of a discussion covering the inauguration of syndical control in the textile plants.

The incorporation of the cost-of-living supplement to wages as a permanent component in the regular pay, and the

revision of this supplement every three months.

3. The establishment of minimum wage rates for all categories of workers.

4. The increase of piecework rates.

5. Increased pay for certain classes of hands and for the so-called "auxiliary" workers—i. e., carpenters, machinists, etc.

6. The continued payment of the usual rates of pay, or substantial percentages thereof, when work is discontinued from causes beyond the operatives' control.

7. Twelve days' annual leave with full pay for each employee.

8. Extensive reclassifications for several classes of employees which would result in higher wages.

DYEING STOCKINGS

Two common methods are employed for this purpose. Either the stockings are dyed in open wooden kettles provided with a perforated bottom, or else in large, horizontally rotating perforated iron drums, through which the dye-liquor circulates. Other forms of apparatus are in use, notably the pack machines; but it seems that the opinion prevails that better dyeing results are secured where the material to be dyed has freedom to be moved in a fixed volume of dye-liquor. The horizontal rotating machines, similar to laundry machines, have in innumerable instances demonstrated their value for stocking dyeing in dyehouses of the smallest size as well as in large plants.

In dyeing stockings according to the common method in open tubs, the bath is made up with the necessary quantities of dye and chemicals, the well wetted-out material entered, and kept in slow motion for about one hour, taking care that no stockings lodge in the corners of the tub. This operation requires a good, steady workman. After the dyeing has progressed enough, the stockings are lifted out to a draining grille or frame, allowed to drain for several minutes, and afterwards squeezed.

The stockings are then immersed in a bath of water containing about 2 lb. of sodium sulphide crystals for each

100 gallons. The purpose of this treatment is to dissolve as soon as possible an insoluble dye on the goods, which would otherwise be difficult to remove, and which would be the cause of crocking. Keep the stockings in this sulphide water for about three-quarters of an hour and continue the washing with plain water until the washings run off quite clean. After the final rinse, the brightening process is used, and is as follows:

For a bath of 100 gallons dissolve:

Olive oil soap	5 pounds
Olive oil	1½ gallon
Soda ash	5 pounds

While this dressing is much used, it should be remembered that it is by no means permanent, and that after the first washing of the stockings it is entirely removed.

To impart feel or handle similar to that of aniline-black-dyed goods, the following treatment is given, after which well-rinsed goods are taken

through a hot bath containing, for each 100 gallons, three pounds of soap; then lift, drain, and turn for a short time in a second bath containing, for each 100 gallons, five pounds each of alum and acetate of soda. Finally, wash off, whiz, and dry.—*Posselt's Textile Journal*.

W. T. B. WOULD SIFT DYE COMPLAINTS

The War Trade Board section of the State Department, which is regulating the importation of German dyestuffs, chemicals, drugs, etc., must cease to function after March 1, it is said, unless Congress sees fit to provide additional funds for it. A request for a deficiency appropriation of \$15,000 has been submitted to Congress. This would carry the Board through until June 30, the end of the fiscal year.

If this money is forthcoming, it is understood to be the plan of the Board to send one or more experts into the field to make investigations of the situation as regards the use of American dyes and the alleged need for German dyes in some instances. The Board is receiving reports from time to time from various dye consumers that they cannot use American dyes or cannot get the right kind. The Board has been investigating these claims by correspondence as best it can, but it is felt that much better results can be obtained by personal inspection and conference on the ground.

NOTES OF THE TRADE

The Carnegie Trust, an announcement states, has agreed to endow the Chair of Inorganic Chemistry in the Royal Technical College, Glasgow, with a fund of £10,000.

The Kentucky Color & Chemical Company, Louisville, at a recent meeting of the Board of Directors, authorized an increase in the capital stock from \$70,000 to \$200,000. This was found necessary in order to take care of the increased volume of the company's business.

The E. R. Smead Company, 820 Kirby Building, Cleveland, has been appointed distributor of Shawnee Dry Colors for Cleveland and northern Ohio, while the C. L. Duncan Company has been appointed distributor for the Pacific Coast. Warehouse stock will be carried in Cleveland and San Francisco.

To manufacture and deal in dyes, colors and chemicals of all kinds, the North Hudson & Chemical Company has been incorporated under the laws of New Jersey with a capital of \$100,000. Headquarters will be in Bergenline Avenue, West New York, and the incorporators are John H. Feiberger, Henry Gettler, William Kuppe and Henry Kalt.

The North American Dye Corporation, Mount Vernon, N. Y., has again granted its employees 5 per cent on the amount of their salary received during the year 1920. Charles A. Loring, secretary of the company, was for many years officially connected with Powers-Weightman—Rosengarten Company. In the announcement to the employees, it is stated: "Even in the face of the present depression in many lines of business, we look forward with confidence, that by our united efforts, we shall make 1921 the most prosperous year in the history of the company."



AMERICAN DYESTUFF REPORTER

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In 2 Sections
Section 1



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"Circulated Everywhere Dyestuffs Are Used"

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Vol. 8

New York, February 7, 1921

No. 6

DYE PRICES AND PROSPECTS

Extracts from the Report of the
Wetterwald & Pfister Company

IN accordance with its custom, the Wetterwald & Pfister Company, 276 Spring Street, New York, distributor of "Aero Brand" dyes and American agent for the Wetterwald & Pfister Company in Basle, Switzerland, has issued a report on conditions in the domestic and foreign dye industries during the past year, and because it is likely to be of interest to many readers of *The Reporter* it will be presented, as was its predecessor, in these pages. The report this year appears under the general heading "A Review of the Dyestuff Industry in 1920," and is divided into three parts, consisting of "General Comment," which considers the activities of Swiss, German and American factories; "Conditions During 1920," and "Outlook for the Future."

It is the second two sections, comprising a little less than half of the document, which we pass on to the reader this week, practically without comment, while the portion dealing with the output of Swiss, German and

American factories will be considered separately next week, since it is felt that one or two of the implied conclusions therein are at variance with the facts of the American dye industry's situation to-day—or, at best, fail to take sufficient cognizance of those same possible "imponderable factors" of the future recognized so willingly in the second half of the report.

Briefly, this latter portion which we reproduce below offers excellent testimony in support of the belief that the turning point has been reached, and that the next few months will show the beginning of a gradual climb upwards and out of the Slough of Despond and abnormal depression which both dye-making and dye-consuming industries have been struggling in. It likewise offers what many readers may discover—when it is too late, unless they give due heed now—to have been sound advice; namely, that it will be advantageous to place orders for some time ahead at the bargain figures at which dyes can be had to-day.

The second half of the report follows:

CONDITIONS DURING 1920

Expectations as to the resumption of the German dye production, nursed by foreign buyers ever since the Armistice, were not fulfilled in 1919. Stocks held abroad after the Armistice disappeared and had to be replenished. Toward the end of 1919 orders were already coming in fast and, as we said in our market report dated December 31, 1919, "prices are climbing again and threaten to approach again the soaring heights that prevailed during the war."

Our prediction came true. Orders kept pouring in, deliveries were urgently needed and "spot goods" (immediately available merchandise) commanded heavy premiums, with future deliveries lagging only slightly behind. Owing to insufficient production during the war, manufacturers in the U. S. A., Switzerland and other countries had been compelled throughout the duration of the war to "short-ship" foreign customers so as to insure a just distribution of quantities available. At the beginning of 1920, therefore, foreign customers were afraid of these "short-shipments" and endeavored to secure for themselves larger quantities by doubling their orders. The result was an unprecedented demand for dyes early in 1920, attended by the usual rise in prices and an entirely unwarranted stimulus to overproduction.

This factor, in conjunction with the enormous growth of the industry, the expansions and additions to factories, the founding of new dyestuff manufacturing, the increased efficiency in production as well as in distribution, brought about the necessary result that the "double orders" of foreign customers were carefully filled and supplies poured in on them far beyond expectations or actual requirements.

When the situation was finally realized abroad, new business ceased abruptly in about August of the past year. If the general economic conditions had continued normal, manufacturers would have lived out the balance of the year and would have been busy filling accumulated orders; the price levels which had declined to normal—due to absence of speculation and new orders—would have continued at normal for some time instead of experiencing such disastrous and precipitate reductions as actually took place in the months following.

It is well known, however, that an economic depression of world-wide effect and of unusual severity occurred at about that time; deflation of prices and liquidation of stocks have been the watchwords ever since. The dye-consuming industries experienced a sudden setback and were compelled to curtail or discontinue operations. Such a condition could not have been anticipated by foreign dye importers, who found it impossible to keep stocks moving and to liquidate normally.

As a consequence, orders still out-

standing were canceled, bringing all production of dyes for orders on hand to a complete standstill. There has been no renewal of business activities up to date and, what is even worse, there has been precipitate and in some instances forced liquidation of stocks, with price concessions far out of proportion to actual production cost.

OUTLOOK FOR THE FUTURE

Intrinsically the manufacture of dyestuffs is on a SOUND and HEALTHY basis; this is completely borne out by the fact that manufacturers here and elsewhere have either closed down completely or have materially reduced production, and that cessation of operations has in nearly all instances taken place in a smooth and natural manner; and, finally, that there are practically no manufacturers' stocks pressing on the market. Dyestuffs cannot be produced at the low figures quoted from Japan, China and India;

otherwise production would continue "for stock" and manufacturers would feel confident of their ability to dispose of stocks in the future—after the liquidation has spent itself—with a fair margin of profit. But when cost of production and cost of distribution no longer control the selling price; when there is so much uncertainty as to the extent and duration of the economic depression and the period of liquidation, manufacturers naturally hesitate to invest capital in production "for stock" with the prospect of eventually having to "dump" their output on a weak market, thus helping to depress prices further. It is more profitable to close down, let liquidation take its normal course, let economic conditions right themselves and thereafter to resume operations when normal price levels are once more reached.

There is a lesson in this analysis of conditions for our customers which plainly spells *advice to place orders for some time ahead at the bargain*

figures at which dyes can temporarily be had.

Under such abnormal conditions as obtain at present, and in view of the uncertainty as to the future trend of general economic conditions, it is extremely difficult to venture an opinion on the future tendency of the dyestuff market.

The outlook for production is encouraging, due to expansion and growth of the industry everywhere; if a demand of only normal dimensions had to be reckoned with, production could probably satisfy the same during the next year. We do not mean to intimate that the world output to-day is abreast of the demand, but one must not lose sight of the fact that we have had overproduction for some time and that heavy stocks are at this writing on the hands of almost every dye importer abroad. Unfortunately, the demand is normal only for short periods and is governed at other periods by such factors as seasonal requirements, speculation, etc.

The outlook for the price tendency is a matter which also depends on many factors. In a general way we may voice an opinion to the effect that even with continued liquidation we fail to see lower price levels for considerable time to come.

The line indicating the price movement of dyestuffs is governed by RIGID ECONOMIC FACTORS; they consist of:

- (1) Cost of raw materials, intermediates, coal, labor, etc.
- (2) Cost of distribution.
- (3) Certain imponderable factors.

(1): The cost of distribution is a more or less constant factor; it represents the manufacturer's advertising cost, the profit of his agent, salesman or distributor; the cost of transportation, etc., etc. Usually this cost is based on and expressed in a percentage of the price of the dyestuff. (2): The cost of raw materials, intermediates, coal, labor, etc., is not of importance in an attempt to forecast probable price movement of dyestuffs, as these costs

may safely be said to travel parallel to the line indicating the price movement of dyestuffs. (3): In forecasting probable price movements it is the imponderable factors which make our task extremely difficult. These include:

- (a) Production, supplies.
- (b) Distribution, transportation.
- (c) Speculation, cancellation, liquidation.
- (d) Consumption, demand.

These imponderable factors are not constant but entirely subject to individual interpretation of general events, and the general economic situation; subject to unforeseen events (strikes, transportation difficulties, wars, fires); subject to SPECIAL conditions in SPECIAL localities; subject to monetary influences (rise and fall of foreign exchange), etc., etc. It is safe, however, to say that even these imponderable factors REPEAT THEMSELVES REGULARLY with only slight deviations.

This, of course, is in accordance with economic law and the basis of all business forecasting, but it is brought home to those interested in the manufacture or use of dyestuffs in this case by the introduction at the conclusion of the report of a specially prepared chart, the work of J. F. B. Vieweger, of the company's New York office. This chart is given in the form of a circle divided into sectors, each sector representing a period of the cycle of factors through which the business must inevitably pass and beginning, at the bottom, with general depression and violent liquidation; up through the time of normal demand, insufficient supply, and production on the increase, to the time when the demand becomes artificial, with speculation and overproduction setting in. This last period is shown to have taken place during the first three months of 1920, and from there we observe, on the chart, the gradual descent of dye prices through August, 1920, when stocks were heavy, production was curtailed

(Concluded on page 12.)

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In Two Sections—Section One

Pointed solely toward the welfare and growth of the American Dyestuff Industry. Unbiased contributions appreciated.

A. P. HOWES, President
LAURANCE T. CLARK, Editor

OFFICIAL OFFICIOUSNESS

When the Bureau of Chemistry of the U. S. Department of Agriculture brought suit late in the Autumn of 1919 against the Monsanto Chemical Works, St. Louis, large producers of saccharin, to settle the controversy over the possibility of harmful effects following the use of this coal-tar product as a sweetener, there were many witnesses called upon to testify for both sides, and the case resulted in a "hung" jury; the Government men, under the direction of Dr. Carl L. Alsberg, failed to prove their case. The Government had charged that the statements on the Monsanto Company's labels were false and misleading in that they claimed saccharin to be (1) healthful, (2) a perfect sweetener, and (3) positively harmless. The court dismissed the first two counts, so that the case hinged upon whether or not saccharin was positively harmless. Upon the jury disagreeing, the Monsanto attorneys requested another trial which, to date, has not been held, thereby leaving the question—if any—still legally undecided.

Now mark: In the meantime, Dr. Alsberg, in his capacity as chief of the Bureau, has sent broadcast to State and Municipal Food and Drug officials a digest of the testimony of the Government witnesses at the undecided trial, ignoring utterly any of the testimony of the Monsanto witnesses or even of the Government witnesses on cross-examination. Moreover, he specifically states in the

letter which accompanies this testimony that "its (saccharin's) harmfulness is of a very insidious character."

The Monsanto organization, in self-defense against what it rightly regards as a most unfair and biased action, has prepared a digest of the testimony of its own witnesses, together with that of the Government witnesses sent out by Dr. Alsberg, and has printed *both*, side by side, in one large circular for general distribution to those interested. And to cull one glaring example therefrom, the Government digest of testimony (sent out to the food officials) shows that in reply to the question: "Would you say that the general use of saccharin as a sweetening agent would be positively harmless?" Dr. Horace W. Soper, a practising physician of St. Louis, answered, "No, I think it would be harmful; positively"—whereas on cross-examination this same physician admitted his own signature at the bottom of a questionnaire previously sent to him by the Monsanto Company, in which he had answered the following questions thus:

Q. "Have you observed its (saccharin's) action on the digestive functions, when used for long periods?"

A. "Yes."

Q. "Have you noticed any injurious by-effects?"

A. "None whatsoever."

Q. "Do you consider saccharin harmless when used simply as a sweetener for beverages?"

A. "Yes."

Q. "Do you consider saccharin harmless?"

A. "Yes."

Q. "Have you personally used it, and with what untoward effect?"

A. "Occasionally for a time as experiment: no untoward effect."

Dr Soper further testified in his questionnaire that he had been occasionally prescribing it for his own patients as a substitute for sugar during a period of ten years.

It is far from being within the province or the ability of The REPORTER

to contribute one iota to either one side or the other in such a case as this suit, and in any event that is not the point at issue here. But from a consideration of the instance cited above it must be apparent to all that Dr. Alsberg distinctly exceeded the requirements of his office when he undertook to send out prematurely any collection of testimony which did not also include testimony for the defendant. If he wished to warn local food officials that the Government chief, personally, held saccharin harmful, and to let them know that the case was still awaiting court decision, the only fair way to have gone about it was to have presented both sides, thereby enabling the officials to exercise their judgment as to whether or not they desired restrictive legislation.

The method he chose was high-handed, to say the least, and should the court eventually uphold the claim of the Monsanto Company it is possible that he could be made defendant

in a suit for damages if it could be shown that his action had given rise to local prohibitory or restrictive legislation. In any case, he would be in an exceedingly awkward and unenviable position.

His action in presenting one side of the testimony in this case looks very much like a clumsy attempt to enforce, by means of propaganda, a personal prejudice without legal warrant—an attempt which, by the way, due to the Monsanto Company's readiness to take its own part, is not likely to succeed.

PRINTING COTTON FABRICS

In order to produce improved half-discharge styles on cotton fabrics it is proposed by the Calico Printers' Association, in British Patent 151056, to use sulphite thickening solutions with or without metallic mordants, and after printing or padding to impregnate the fabric with metallic mordants, fixing, dunging, tanning and dyeing with basic or other dyestuffs

appropriate to the mordant and clearing.

An example of the process is as follows: A sulphite standard is first prepared by adding $\frac{7}{8}$ gallon of water and $\frac{9}{32}$ gallon caustic soda of 70 deg. Tw. to $\frac{3}{4}$ gallon of bisulphite of soda 70 deg. Tw. This is brought up to $2\frac{1}{2}$ gallons. To four gallons of this sulphite standard are added eight gallons of gum water, four gallons acetate of alumina 14 deg. Tw., and half a gallon turpentine. The relative proportion of sulphite standard and of acetate of alumina requires to be varied according to the nature of the pattern, the depth of engraving and the effect desired. The acetate of alumina may be replaced by other mordants or left out altogether.

This half resist color is printed on the fabric either by itself or with a customary lime juice resist in fitted patterns. After printing the fabric is sloop padded with acetate of alumina 6 deg. Tw. and dried. It is then fixed, dyed and dunged with one or more dyestuffs appropriate to the mordant and subsequently cleared in the usual manner. If the half resist color is printed by itself, oil prepared fabric should be used; if in connection with the lime juice resist, white fabric.

In the former instance the resulting effect is red and pink, and discharge effects may be produced by way of the customary methods for alizarine reds and pinks. Alternatively, the lime juice resist may be printed on the fabric first and cover printed in a different pattern with the half resist color, then sloop padded with acetate of alumina and dried, and subsequently treated as above. In this case the white resist effect appears in both the red and the pink.

ESTIMATED COTTON PRODUCTION IN MEXICO

According to information obtained by the Boletín Financiero y Mineral de Mexico, it had been hoped that 240,000 bales of cotton would have been harvested in Mexico at the end of the season. It is stated now that only 70,000 or 80,000 bales were produced. Vari-

ous reasons have been given for this light cotton crop, among which are destructive insects, floods, and the drought in certain sections.

DYE PRICES AND PROSPECTS

(Concluded from page 8.)

and general depression was again making itself felt—and so on, back to the present low point, January, 1921, when much the same conditions prevail as was the case two years ago. The movements of dye prices through the cycle are indicated by a spiral line running around the circumference of the chart, which is one of the best ready references for recalling how things stood at any given time during the past two years of the dye industry which has yet made its appearance. The report continues:

"We have just completed in our industry one economic cycle. . . . The chart should serve as a very accurate guide, being based purely on economic principles. . . . The only element of uncertainty in connection with the forecast is TIME. In other words, we would not venture to predict whether the next cycle of price movement will take two years—as did the last—or ten years. How rapidly these imponderable factors will occur; to what extent careful merchandising will arrest or retard the movement toward "high"; to what extent distributors will speculate or carry unsold stocks in the future; what will be developments in the manufacturing countries, especially Germany; will there be another war of importance to upset all economic theories—all these are questions to be answered by the future. On the answer depends the movement of dyestuff prices in 1921."

And The Reporter, for one, has every confidence that the recovery, already getting under way as indicated by the increasing reports of renewed activities in the textile mills and the fact that retailers are at last gradually getting their shelves cleared off, will be lusty enough to be of some real use by the time spring begins.

WILLIAM H. JACKSON, KLIPSTEIN EXECUTIVE, DIES IN PHILADELPHIA

It is with the profoundest regret that word is received in this office of the death last week of William H. Jackson, vice-president of A. Klipstein & Co., and for many years manager of that firm's Philadelphia office. Mr. Jackson died Wednesday, February 2, at the Hotel Majestic, Philadelphia, which for some time he had made his home. In addition to being a leading figure in Philadelphia politics and in the social life of the city, he was one of the best known dyestuff men in the East, and his passing will be mourned by a host of friends.

SINGLE BATH METHOD OF DYEING WOOL

The single bath method embodies dyeing (a) with the use of potassium or sodium bichromate (the process chiefly used); (b) with chromium fluoride; (c) with alum; (d) with ferrous sulphate and copper sulphate (for aniline dyestuffs in association with wood dyes); and (e) with copper sulphate.

By the method (a) the previously prepared wool is worked at the boil for an hour or so with the addition of 10-20 lb. Glauber sales and $\frac{1}{4}$ lb. sulphuric acid 168 deg. Tw. After sufficiently exhausting the bath and cooling down somewhat, $1\frac{1}{2}$ oz. to 3 lb. of potassium, or sodium, bichromate, according to the depth of shade are added and dyeing continued at the boil for $\frac{1}{2}$ to $\frac{3}{4}$ hour to develop the color fully.

Some of the Alizarin and Anthracene brands are much improved in fastness, and, in most cases, considerably changed by treatment with potassium bichromate. In actual working it is important to use the correct quantities of sulphuric acid and potassium bichromate for dyeing and developing. Any difficulties arising in obtaining level dyeings may be counteracted by adding acetic acid first of all to the liquor, and then, in

small portions at intervals the sulphuric acid. Indeed, for the production of bright shades with Alizarin Red S acetic acid only should be used, while for darker dyeings more than $1\frac{1}{2}$ per cent of dyestuff, the addition of sulphuric or oxalic acid is recommended.

When applying some of the chrome blacks and blues the water employed must be corrected with oxalate of ammonia before commencing the dyeing. The proportions to employ for 100 gallons of liquor are: for soft water (3.7 to 7 deg. hardness) 2 oz. oxalate of ammonia; for water with 7.-10.5 deg. hardness, 5 oz.; and for water with 10.5 to 14 deg. hardness, $6\frac{1}{2}$ oz.

By the method (b) after treatment with chromium fluoride, which is employed for the production of medium and dark blue shades on piece-goods, the process consists in dissolving the required amount of dyestuff in about ten times the quantity of hot water, adding the solution through a fine

sieve to the dyeing liquor already made up with 20 lb. Glauber salts and 4 lb. oxalic acid. The previously scoured goods are run in the cold liquor for about half an hour, the temperature raised to the boil in about 45 minutes, and this temperature maintained while working a further hour. The steam is then shut off and 2 to 4 lb. chromium fluoride dissolved in warm water, added in small portions at a time. The liquor is brought once more to the boil and maintained at that for about one hour. The material is then rinsed with water.

It may be remarked that in some circumstances one gallon of ammonium acetate per 1,000 gallons of liquor may be used in place of Glauber salts, and 3 to 4 lb. of sulphuric acid 168 deg. Tw. may be used instead of oxalic acid. In the case of heavily milled goods, the acid should be added to the liquor only in small portions at a time. By the use of more chromium fluoride, as by prolonging the operation of boiling with the ordinary quantity, greener shades are obtained; the use of more acid produces redder shades.

By the method (c), after-treatment with alum, used especially for the production of a very bright red with Alizarin Red S, the process consists in preparing a liquor at a temperature of 85 deg. Fahr., with 20 lb. Glauber salts, 3 to 4 lb. oxalic acid, and about 4 lb. of the dyestuff dissolved thoroughly in hot water. Enter the well-scoured goods, treat for 15 minutes in the cold, raise to the boil in 45 minutes, and boil for one hour. At this stage add 10 lb. alum, dissolved in hot water, and boil for a further half to one hour, and finally rinse with water. If hard water is used, the amount of oxalic acid should be increased correspondingly up to five pounds. The dyeing should be carried out in wooden, or tinned copper, vessels.

By the method (d), after treatment with ferrous sulphate and copper sulphate, in which the natural and artificial dyes may be used together, the process is used for piece goods only mainly for the production of a black.

The dyeing liquor is prepared (for 100 lb. wool) with 2½ lb. oxalic acid, 3 lb. Palatine Black 4B, and a decoction from 35 lb. of rasped and aged logwood. The liquor is boiled-up, the wetted goods entered, and dyeing continued for one hour at the boil. Then add to the liquor, which by now will have turned pure yellow, 8 lb. ferrous sulphate and 2 lb. copper sulphate, and work for one hour at the boil.

Instead of the 35 lb. of logwood, about 10 lb. of logwood extract may be used. The process may be shortened by adding all the ingredients at once to the liquor and dyeing at the boil for 1½ hours; the resulting dyeings are, however, less fast to rubbing.

By the method (e), after treatment with copper sulphate, which is used chiefly for the dyeing of fezzes, hat bodies, etc., the process consists in proceeding as in method (a), and when the liquor is sufficiently exhausted, in adding 3/5 lb. copper sulphate, when the boiling is continued for a further half hour, and the material rinsed. Thiazine Red G and R give, by this method, claret shades which are very fast to light.—*Posselt's Textile Journal*.

CLEANLINESS IN THE BLEACH WORKS

By H. D. MARTIN

Getting out a spotless product from a bleachery is a task which calls for great skill on the part of the management. Many bleacheries have much trouble with all kinds of spots, streaks, and bad work in general caused by oil stains, rust spots, black streaks and dirty places of all kinds. Many of these defects apparently come from nowhere in particular, and it often puzzles every member of the official force to locate the sources of each defect.

Many seconds and even, useless goods have been turned out in large quantities before bleachery troubles have been located and eradicated. Fresh oil spots are quite common.

There are two ways of reducing this evil. First start a campaign of careful oiling. Fix the oil-can spouts so that they will not squirt oil so freely. All oilers should be cautious, and instructed to put only a little oil in the place where needed. A drop of oil in the right place is often as good as a gallon and better.

Secondly, some good brand of loom stainless oil should be used or non-fluid oil. Black oily spots are carried to the goods in a large variety of ways. The remedy for this evil is to keep the machinery clean, and not to flood bearings with oils. Oil pans should be under all shafting hangers. All workers handling the goods should have clean hands. Fixers around looms soil a great deal of cloth with their tools and with their oily hands.

RUST SPOTS

Leaving the looms, we pass on to the bleachery. Here a careful search should be made for damaging agencies like those made in the weaving department. But in addition to those, there are other sources which are different, such as pipes of all kinds which sweat. These sweatings drop and cause rust spots and other stains on the cloth. Rust spots are also caused by a large number of metallic substances which may find their way into the bleaching kiers along with the goods; such as nails, washers, screws, nuts, pins, iron scales, needles, and broken pieces of all kinds. Great care needs to be exercised to protect the goods against these troubles. Rust spots may be caused several times by the same for-

eign substance if it is not removed from the tank promptly.

Anything which may cling to the goods like pins or needles cause another evil such as indenting rolls, also that of cutting goods in case the pin or needle becomes imbedded in any roll. Every time the pin turns with the roll it will cut its way through the fabric as neatly as though it were cut with a knife or shears.

All overhead gearings, and wood-works in a bleachery should be kept clean. Dirt, lint, plaster, paint scales, iron scales—all of these things will make a general variety of spots and stains in various degrees of intensity proportionate to the size of the particles of dirt which may become loosened and start on their journey of destruction throughout the bleachery.

A good way to do is to follow the goods straight through the bleachery and carefully examine everything over where the goods pass underneath. Protect every suspicious place which may have even the appearance of causing trouble. In this way much injury to the goods is generally avoided.—*Canadian Textile Journal*.

DYEING OF PAPER PULP FOR TEXTILE PURPOSES

In dyeing paper pulp to be used for preparation of yarns for textile purposes, the resin is first added, and then the dyestuff solution, and lastly after mixing for half an hour the aluminum sulphate is added. If it is desired that the pulp should become warm through prolonged beating the alum is added shortly before emptying. In case mineral colors or basic and acid dyestuffs are added in this manner, there is no

addition of mordant required for fixation. To avoid uneven results in dyeing with basic colors, it is suggested to use a little alum in the pulp before adding the dyestuff. Acid dyestuffs will have their highest tinctorial properties developed when used with heavily sized papers containing 5 per cent of size, and their use is not very economical in connection with weakly sized papers for spinning, and their use should be avoided altogether in unsized cellulose yarns. When the substantive or direct dyeing cotton colors are used sufficient soda ash should be added in the size in order to make the pulp neutral or slightly alkaline in reaction. (*E. Purschel, Papier-Zeitung.*)

ESTIMATION OF HYDROSULPHITE

By G. BRUHN

The estimation of hydrosulphite by titrating a solution with a standard solution of potassium ferricyanide, using ferrous sulphate as indicator, presents certain difficulties, and is liable to error owing to the rapidity with which the solution of hydrosulphite is oxidized by the oxygen of the air.

A rapid, simplified modification of this method is now recommended as follows: 20 c.c. of a potassium ferricyanide solution, containing 80 grams per liter, are run into a small porcelain dish, and sufficient ferrous sulphate is added to produce a colloidal solution of Turnbull's blue, but not a precipitate. A quantity of the dry, finely powdered sample to be tested is weighed out on to a scoop and added in small quantities at a time to the ferricyanide solution, with good stirring, until completely dissolved. With each addition the blue color becomes paler, but does not disappear as long as any ferricyanide remains.

When all the ferricyanide has been converted into ferrocyanide the blue-green color suddenly changes to a bright reddish-yellow. The scoop is then weighed again to determine the quantity of hydrosulphite used, and naturally the accuracy of the method is dependent on the care and skill used in

dusting the powdered hydrosulphite into the solution of ferricyanide.

This simplified method contains a constant error, as the oxygen dissolved in the ferricyanide solution doubtless takes part in the oxidation of the hydrosulphite, so that the result obtained will be low. This error, however, is shown to be only about 0.5 per cent, if the stirring is gentle, and consequently is not of moment in the technical estimation of 'Blankite'.—*Zeit. f. angew. Chem. in the J. Soc. Dyers and Colorists.*

DYEING LINEN FABRICS

Classes of Colors Used—Modifications of Process.

The direct dyestuffs are largely used for the dyeing of linens. As the linen fiber does not absorb these so readily as cotton does, and is not so easily penetrated by the coloring matter, the method of dyeing must be modified by delaying the rate of absorption either by leaving out or diminishing the amount of common salt or by increasing the amount of soda ash, or by making suitable additions of turkey red oil or soap.

The sulphur dyes are also employed for the dyeing of linen, but here again the method of application differs from that usually practised on cotton in diminishing the amount of salt added to the dyeing liquor and increasing the proportion of sulphide of soda.

The basic dyes are also used on mordanted linen, but a less amount of tannin and of antimony is required for linen than for cotton, and the dyeing is accomplished at a higher temperature and over a longer period. For example, for a 10 per cent dyeing of direct black, additions are made of about 2 per cent soda ash and 10 per cent Glauber salt. The liquor is used as concentrated as possible and is heated, preferably by indirect steam.

Certain natural coloring matters are also very useful for many classes of linen fabrics. A bright shade of

yellow may be obtained with turmeric, and a very satisfactory brown with catechu, by boiling the goods for an hour in an 8 to 10 per cent solution, then treating for half an hour in a hot 3 per cent solution of bichromate of potash, followed by washing and soaping to improve the color.

A deep yellow shade is obtainable by first mordanting in acetate of alumina, washing and dyeing in a solution of quercitron with the addition of a small amount of acetate of alumina, and finally washing.

The lead colors have likewise been of service. A lemon-yellow color is obtainable by treating in a cold 8 per cent solution of acetate of lead, then in a warm 4 per cent solution of bichromate of potash, returning to the first liquor, and finally washing.

For the production of bright blue shades the linen requires to be bleached, after which it may be worked for twenty minutes in a cold solution of nitrate of iron, washed, treated in a cold solution of yellow prussiate of potash, acidified with sulphuric acid, then in a solution of alum and washed.

The acid dyes are occasionally employed for the dyeing of linen fabrics for the production of bright scarlets fast to light. The dyeing liquor is made up of the coloring matter and 1 pound of Glauber salt, 1 pound of alum and 1½ pounds of dextrine to 100 liters of water. The material is dried without washing.—*The Textile Mercury*.

PROFITS OF BRITISH AMALGAMATED COTTON MILLS TRUST

Notwithstanding an increase in capitalization to £7,000,000, of which £4,500,000 has been issued, the Amalgamated Cotton Mills Trust (Ltd.) has paid a dividend for its last financial year of 22½ per cent. In its report the Trust states:

The total net profit earned by the subsidiary companies, after reserving over £1,800,000 in respect of excess

profits duty, corporation profits tax, and income tax, was considerably in excess of the amount declared in dividends.

Dye-a-Grams

"The Zero Hour"—"Reporter" headline. Meaning, we presumptuously presume, when the last drink is consumed!

"The German Attitude"—'Nother "Reporter" headline. Well, it's something to have even an attitude left.

Looks as though it was this same attitude—or lack of one—that's keeping the Dye bill shelved!

"An Appeal to Americans"—Still another "Reporter" headline. Gosh, this is the first appeal we've heard of that didn't call for cash!

Being "stung" with a poor quality of dye by a personal friend does NOT lessen the sting!

"Furs Are the Badge of Prosperity," says a headline. And a goodly portion of it is installment prosperity.

If we were about to have another Democratic administration, an easy way to take a census of the country would be to merely count the names on the Government payroll!

Consolation: Blue Law Sunday

will not mean that it will be illegal to pass the plate on that day.

—o—

A lot of people in the dyestuff industry got rich quick—which is, perhaps, the reason why they are getting old quick!

—o—

A tree, while remaining rooted to one spot, branches out. Trouble is, too many humans copy the tree and expect the same results. (Philosophy.)

—o—

Capital, very often, is the money the other fellow has!

—o—

It seems that at last New York City is making the crooks and gangsters dance a "Hylan" fling!

—o—

Nobody worried, or saw much amiss
When the prices of dyestuffs

this.

like

rising

Were

Spirits *now* sink to the deepest abyss

'Cause the prices of dyestuffs

Aren't

falling

like

this!

G. E. T.

Thomas D. McKinnon, according to a recent announcement, has resigned as overseer of dyeing and finishing for the Ashuelot Woolen Company, Gilsum, N. H., which position he has occupied for the past year.

NOTES OF THE TRADE

Announcement has been made by the Brown Woolen Mills, Ltd., Kingsville, Ontario, successors to the Brown & Wigle Company, Ltd., that this firm has just completed a new dye house of modern construction and equipment. The structure is 75x80.

Announcement has been made by the Ritter Textile Company, Amsterdam, N. Y., that August Berlings, of Shelton, Conn., has been appointed overseer of dyeing for the company.

Under the laws of New Jersey the Tar Reduction Corporation has been incorporated with a capital of \$5,000 to manufacture, distill, buy, sell and otherwise deal in chemicals, dyestuffs, etc. The incorporators consist of James G. Affleck, Louis S. Middlebrook and Merrill N. Gates.

To receive \$12.50 a word for their production is a mark which few authors attain, yet this is the rate recently paid Dr. H. D. Kessler, resident physician for the National Aniline & Chemical Company at the Marcus Hook, Pa., plant, who wrote eight words of doggerel supplying a missing line in a limerick and as a result was awarded a prize of \$100 by the Philadelphia newspaper conducting the contest.

Gough, Kidston & Co., chemical manufacturers, oil and dyewood merchants, 43-45 Great Tower Street, London, have announced that they have taken over the business of W. M. Kidston & Co., importers and merchants in gums, waxes and petroleum jelly, and that they will carry out all contracts of the latter firm.

With a capital of \$50,000 the Zobel-Hoffacker Dye Works have been incorporated under the laws of New York. Headquarters of the new enterprise will be located in Brooklyn, and the incorporators comprise G. S. Gelston, and C. W. and P. W. Zobel, of Brooklyn.



AMERICAN DYESTUFF REPORTER

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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

New York, February 14, 1921

No. 7

THE APOTHEOSIS OF SILK

This Product Was Not Only Queen, but King, Prince and Prime Minister Last Week at the Grand Central Palace, Where American Dyes Made Wondrous Exposition Possible

THERE is a crude, probably vulgar, descriptive expression current in American slang which was never any too happy a vehicle for one's thoughts even in its best days and which, from constant repetition and overwork, now rather tends to cheapen the object to which it is applied. When the light-minded wanted to convey an impression of extreme richness, exclusiveness or general patricianism, they were wont to remark: "That looks like a million dollars." We are guiltily aware of its shortcomings, well aware that it neither tells the story nor begins to convey the idea which we hold straining at its leash, yet, to the entire exclusion of many another more elegant and adequate phrase, this bit of still-popular argot, somehow or other, persisted in forcing itself to mind and succeeded in lodging there permanently after we had departed from the First International Silk Exposition held last week at the Grand Central Palace, New York City.

We are ashamed, and apologize to the wonder-working committee which was responsible for the creation of so lovely a thing as this event proved to be. Nevertheless, if for no better reason than to relieve ourselves of the hideous refrain, we must say that from the Rolls-Royce cars parked outside, to the final breath of incense wafted outward by the curtain as it fell upon the gorgeous Pageant, the Silk Show looked like a million dollars. And if the language be cheap and tawdry, accept our emphatic assurance that the Exposition was not.

Having had our own way about the selection of an opening phrase, we shall now try to be more just, and, if possible, more capable in appreciation. We fell a-groping for words principally because, from the standpoint of sheer beauty and appeal to the senses, the Silk Show is easily foremost—and by reason of its very nature must continue to be foremost—among all the "set" trade ex-

hibits held in this country; that is to say, classing it with the Chemical Show, the Automobile Show, the Textile Show and others; and excluding the numerous fashion shows, which belong in another category. The Chemical Show was certainly not wanting in pictorial features, although making no bid for any as a whole, while the Textile Show, of course, set out for and achieved much in the way of the spectacular; but the Silk Show so far outshone even the latter as to mark it off as unique.

All this may be regarded by some as the superficial side of the affair, but it is not. It is essential. The purpose of the Show was to make a heavy bid for public attention as well as trade attention; and no matter how well those responsible for the practical side of the exhibition had performed their work, it would have been in vain had it not been for the presence of this appeal. The success of an industry as an industry is gauged by the quality of its products, but the success of an exhibition as an exhibition is gauged by the degree in which it attracts and interests visitors, and the degree in which it is remembered and talked about after it is all over. Viewed in this light, our "superficialities" become true fundamentals, and to the promulgators of the Silk Show belongs the credit of having turned in perfect scores in both divisions of the undertaking. Moreover, these self-same pictorial qualities of the Silk Show are anything but superficialities to readers of this journal, for was not the basis of the appeal to be summed up in one word: Color? Rob the Silk Show of its color and there would be nothing left but some machinery and demonstrations of manufacturing processes, and yards and yards of almost meaningless fabric, good for nothing in the world except to cover the human frame—and then what would become of public appeal? Instead, the Show was vivid evidence that the Silk industry

is the Dye industry's fairest daughter, and served well to remind the public anew that the latter industry is the key to so many beautiful, desirable and useful products that its role is one of primary importance in our economic scheme. If there could only have been some way—and we truly regret that there was not—of forcing it upon visitors that the same industry which helped to produce the Silk Show also played a part in producing the explosives and gases necessary to protect all this loveliness from future harm, many of the drugs and medicines used to allay pain and check disease, the perfumes which rendered more attractive a thousand stylishly gowned women who viewed the exhibits, the photographs of garments which adorned many of the booths, and even some of the flavors in the visitors' food—a great and useful lesson might have been driven home then and there.

Continuing with the superficial-fundamental aspects of the Show, let us take a fresh start by saying that the ceiling of the main floor of the Palace had completely disappeared, as well as the space above the central court, beneath heavy drapes of silken fabrics. The effect was magical. Proceeding down the center aisle, which had been named "A Street in Bagdad," one found the exhibitors flanking this thoroughfare admirably carrying out the Oriental *motif* in their hangings and decorations—all, of course, in silks of the most splendid hues imaginable. It is simply beyond our powers to convey an adequate picture of the combined effect of the exhibits occupying the main floor, and we shall not try. Brilliant, gorgeous, variegated, luxurious, opulent, dazzling, as well as subdued, restrained, mysterious, soothing, restful, refreshing, and up the scale again to invigorating, scintillating, iridescent, vivid, voluptuous, riotous, and even barbaric, are some of the adjectives which present themselves offhand. Many exhibitors went in for gay and exhilarating ef-

fects, while others achieved fairy-like grottos by the use of soft lights, transparent materials and ephemeral—no, we don't mean fugitive—hues. Here and there were exhibits achieving artfully graded tonal effects; elsewhere, and in great profusion, were booths which fairly outrivaled the rainbow, yet without, however, detracting in the least from the general harmony, while the generous use of living models added still further vivacity to the picture. But it is of no use; we must hurry on, and in any case the task would require at least a Homer to provide descriptive powers of sufficiently high voltage to re-create the scene for those unfortunate enough to have missed it.

The real climax to each afternoon and evening was, of course, the Pageant, which symbolically portrayed "The Story of Silk," from the ancient Chinese legend of the discovery of silk as interpreted by Desiree Lubovska, former *premiere danseuse* of the New York Hippodrome, and her ballet, and its progression into and through the various countries from the Eastern to the Western world and its ultimate possibilities in the present era. The various costumes, in which silk figured prominently, based on the historical records, were shown separately by members of the company and included a Chinese emperor and empress of 2640 B. C. or thereabouts, this date marking the origin of silk in that country; an Egyptian slave girl, a Grecian general, a Roman emperor, a Japanese mikado, a dancing girl of India, a plebeian girl of Persia, an Arabian nomad, the Emperor Justinian and the Empress Theodora in Constantinople, an African silk merchant, a Spanish queen of the Tenth century, an Italian lady of the Renaissance, the French Madame de Pompadour, England's queen, Elizabeth; two pages in Swiss costume, and, lastly, Americans of Colonial days and "Of Yesterday."

Then followed a brief interlude to allow for a quite charming conceit

entitled "Mlle. Vanity," which brought forward a very modern young miss in the act of arising and donning, with the help of two maids, something exceedingly chic in—er—er—street frocks, after which the "Fashions of the Moment," in silk, of course, were presented in bewildering array, showing numberless styles in children's dresses, men's and women's bathing suits, men's Palm Beach suitings, women's sport suits, shopping dresses, street costumes, afternoon dresses, tea gowns, dinner gowns, evening wraps and gowns, ball gowns and dancing frocks. The Pageant was devised and staged by Alexander Leftwich, by arrangement with Daniel Frohman, and credit is due this gentleman for the manner in which he condensed the story of silk, including so many fashions of to-day, into thirty minutes.

But if the staging, lighting and musical effects were competently handled, this cannot be said of the

provision made for visitors. In fact, since it is not good form to speak ill of the absent, perhaps we had better refrain from comment altogether. There was no provision worthy of the name, and this is a real defect which should, in some way, be remedied next year. It is safe to say that two-thirds of the people who desired to see the Pageant were unable to do so, and that at least two-fifths of those who succeeded in gaining a place to stand within range of the stage, which was immediately above and to the rear of the stairs leading up from the main entrance, had most of their field of vision obscured by the series of huge pillars located at either side of the aisle. For more than a half-hour before the Pageant began the congestion at the head of the stairs was terrific; we have played football, which is something, and we have been in New York subway crushes, which is something else, but now that we have withstood the Silk Show jam we at last feel entitled to call ourself a Rugged Creature. From all this it may be inferred that we failed to secure a good position, and hence are Sore. Such, however, is not the case, as luck was with us; these few remarks are inspired solely by what we heard afterward in the way of comment, both in the building and on the street, and by our own conviction that it is a great pity to expend so much effort to create something like the Silk Pageant only to have it wasted on more than half of those for whom it was intended,

and to have it leave the other half vexed and vindictive against the management. It is difficult to know, we must admit, where else the Pageant could have been staged, since but two floors were available, yet the Committee should find a way next year in spite of difficulties, or else abandon the idea of a Pageant, for if they have anything to gain by the inclusion of this spectacle, which must be the case if they are willing to go to so much trouble as had evidently been lavished upon it, they can only gain their end by arranging it so that everyone can at least have a chance to stand on tip-toe for an occasional glimpse at what is going on—and that without being shoved violently from side to side. The main entrance to the Show is *not* the place for an audience to stand if that audience is expected to keep its good nature.

Upstairs, the educational side of the Show brought forward the Chinese method of reeling raw silk, demonstrated by reeling girls from Shanghai; sericulture at the Universities of Nanking and Canton, the tests to which imported silk is submitted upon its arrival in the United States, the work of the silk throwster, the reeling of Italian raw silk, shown by girls from the northern provinces of Italy; the winding of raw silk on modern winders, doubling and spinning, the reeling of thrown silks into skeins; quilling, coning and warping; a warp twisting-in machine in operation, the operation of humidifiers in silk throwing plants, looms weaving crepe and taffeta in operation, a hand loom for crafts work; a velvet loom in operation and a velvet shearing machine in operation, skein dyeing, the work of the Textile Color Card Association of the United States, a showing of dyed and printed fabrics, the engraving of rolls for printing machines, the production of tied and dyed batiks, silk finishing machinery, a five-color printing machine in operation, the production of block printing, braid-

ing machinery, glove making, water softening plants for use in textile mills, a modern ribbon loom, improved type knitting machines, the spooling of sewing silk, reeling and re-reeling by Japanese girls and exhibits of Japanese raw silk.

The Silk Show marks the first time in the history of the industry that silk has had a definite spokesman through the medium of its own exhibit. As Charles Cheny, treasurer of Cheny Brothers and president of the Silk Association of America, declared at its opening: "To impress on the minds of the American public not only that Silk is Queen, but to show that the American silk industry has gained for itself a rank which is commensurate with the high rank of silk itself—that is the fundamental purpose of the International Silk Show, the first exhibition of its kind ever staged in America.

"We must demand recognition as one of the great industries of the country and ask of our fellow countrymen that they shall realize that we are real contributors to the prosperity of the land, and that while we provide work we also provide a useful and essential article, both for wear and for an unlimited use in many fields, and at the same time help to make the world more beautiful. . . . Our exhibition is not intended to advertise or promote the interests especially of the individual exhibitors. We aim to glorify silk and to exalt the silk industry, and our chief endeavor will be to create a harmonious and beautiful picture and to teach simple and fundamental facts concerning our work."

By the accomplishment of the former, the accomplishment of the latter is always materially aided, as anyone can readily find out by making the experiment, and how well Mr. Cheny's committee succeeded in doing both will be testified to by the many who attended the affair. When we spoke of the Silk Show as "looking like a million dollars," it was our intention to open the path for a bet-

ter conveyance of the idea that the Silk Show was a richly beautiful thing whose gorgeousness was never allowed to get out of bounds, and where dignity and restraint were marked characteristics.

This and the importance of the dye industry in making the event what it was, are the reasons for the presence of this talk about the Silk Show in The REPORTER. If these ideas have been conveyed, it has not been placed herein in vain.

And as a final word, we would advise all who are interested in things which are beautiful and which help to make life worth living and the world a better place to live in—should these, we say, find business next year interfering with an intended visit to the Second of what we hope will grow into a long series of silk shows, then by all means, we would counsel them, give up business!

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Pointed solely toward the welfare and growth of the American Dyestuff Industry. Unbiased contributions appreciated.

A. P. HOWES, President
LAURANCE T. CLARK, Editor

DISTORTING THE TRUTH

When last week there was published in this journal a part of the annual trade report of the Wetherald & Pfister Company, a portion of this document—the part dealing with Swiss, German and American factories—was withheld. The reason for the omission, as explained at that time, was because it was believed that certain statements therein might easily convey an erroneous impression of the relative positions of the German and American industries.

In fact, it is quite evident that there is a whole-hearted attempt in the first half of the report to minimize to the greatest possible degree the German accomplishments, while at the same time there is a distinct attempt to magnify the strength of the American industry. And inasmuch as the whole report succeeds admirably in distorting—for the unwary and the uninformed—the true situation, it is treated separately here.

Under the heading, "German Factories," the report states:

"A special report on the dyestuff

market in Germany was published by us last August and the situation is fully covered therein in a general way; we will, however, add some facts which have only come to our notice since the publication of this special report.

"The appended table of net profits, after deducting cost of operations, and dividends declared by the large German companies sheds interesting light on their operations during the fiscal year 1919-1920 (information supplied by our Basle office):

"These figures are, of course, subject to egregious misinterpretation. One is led to believe that the companies have prospered and that operations have been on a larger scale.

"As almost every company's management emphasized in its report to stockholders, the increased profits are almost entirely due to the fact that Germany's exports of dyestuffs were favored in a most abnormal degree by the depression of her currency. Should the actual figures be calculated on a gold basis as against pre-war figures, or even only against war time figures, the picture would be completely changed. We are, as a matter of fact, inclined to the conclusion that her exports must have been of negligible quantity as otherwise the increases in profits, due to the high value of foreign currencies compared to the Reichsmark, should have been vastly greater than is indicated in the above schedule.

"Figures covering actual production or actual exports are unfortunately not available and on account of very irregular conditions an estimate would prob-

Name of Company	Net Profits Reischmarks		Dividends Per Cent	
	1919-20	1918-19	1919-20	1918-19
Badische Anilin & Soda-fabrik....	27,000,000	11,000,000	18	12
Kalle & Co., A.G.	2,500,000	750,000	14	7
Farbenfabriken vorm. Fr. Bayer & Co.	29,000,000	13,000,000	18	12
Actien Gesellschaft fuer Anilin-fabrikation	10,200,000	4,900,000	18	12
Farbwerke Hoechst, vorm. Meister Lucius & Bruning	24,200,000	15,000,000	14	12
Chemische Fabriken vormals Weiler ter Meer	2,600,000	1,150,000	12	10

ably be misleading. It is generally conceded, however, that the improvement which came during the summer months has again been offset by coal shortage and other deterring influences, and that German dyestuffs will not be available for export until towards the end of the coming year (1921) or even later, and then only small quantities.

"The annual reports of the large German companies are most pessimistic concerning the immediate future; a very interesting bit of information is contained in the report of the stockholders meeting of the Badische Anilin & Sodafabrik (November, 1920—this was not the annual meeting but a special meeting) from which we quote as follows:

"The management resolved to continue the contract concerning "pooling of interests" (Interessengemeinschaft). It emphasized the difficulties of competing in the world markets due to the strong competition created by the war in other countries. The industries in

these countries moreover are encouraged greatly by restrictions concerning importation of German dyes. This applies especially to the U. S. A. factories who have entrenched themselves in other dye consuming countries, notably in the Oriental countries, in a manner which *seriously jeopardizes our position*. For this reason we must make ourselves competitive by the highest possible concentration and by pooling the German color interests. . . .

"This information is all the more interesting in view of the fact that the Chemical Foundation of America (founded during the war) has acquired the majority of German patents for making dyes and, according to latest reports, is actually licensing a number of U. S. A. color manufacturers to produce these dyes from these patents. If these dyes are successfully produced in the U. S. A. by the German processes, it might be a difficult task for the German makers ever again to enter the U. S. A. market on a competitive basis for

in addition to these measures taken by the Chemical Foundation, it is expected that the U. S. A. Government will either pass legislation restricting or prohibiting German dye importations, or will levy an enormous import duty, under cover of which the U. S. A. manufacturers will have time and opportunity to work the German processes. While this is being written, the news comes from London that the Government measure prohibiting dye importations for ten years, has been adopted."

There is little doubt but that the German figures showing profits in marks do make things out to be on a larger scale than has been the case in Germany *up to the present*, but it is the future, and the potentialities of the German industry plus the avowed determination as to what it will do to the American industry once the latter is left unprotected, which have to be thought of. Moreover, this report does not call attention to the fact that it is this very depreciation of the mark which renders it all the more impossible for America to think of competing with the German kartel until conditions have changed, which will not be for several years at the very least, according to most views. If the argument of the depreciated mark holds good in one instance, it also holds good in the other.

Now observe what is said under the heading "American Factories":

"The progress made by American factories both in regard to quantity and quality of production is so well known and so universally acknowledged that it is useless to expatiate on it. The fact

that production in the U. S. A. is also on a thoroughly competitive basis with any other country is illustrated by the following statistics:

"Exports of dyes (aniline dyes *only*) by calendar year: June 30, 1917, to December 31, 1917 (6 months), \$3,-500,000; January 1, 1918, to January 1, 1919 (12 months), \$8,630,000; January 1, 1919, to January 1, 1920 (12 months), \$10,725,000.

"Exports of dyes (aniline dyes *only*) by U. S. A. Government fiscal years: June 30, 1918, to June 30, 1919 (12 months), \$10,184,000; June 30, 1919, to June 30, 1920 (12 months), \$17,-131,000.

"These figures speak for themselves. It is not our intention to appear over-enthusiastic or to make claims for the U. S. A. industry which are unwarranted, but we are quite safe in asserting in terms most emphatic and positive that those products, whose manufacture has been taken up by American capital, American chemists, and American labor, are in every respect equal to the best Germany ever produced and in some instances even superior.

"As is well known, London was before the war the acknowledged financier and money center of the world. Had anyone predicted in 1914 that supremacy would pass from London to New York, the statement would have been scoffed at; yet, just such a transmutation was brought about by the World War. Far be it from us to augur as complete a change or as speedy a change of supremacy in the dyestuff industry in favor of the U. S. A. We are fully aware of the shortcomings in our industry and we know that at present the U. S. A. does not produce the same number of dyes as supplied in pre-war days by Germany, notably the vat colors being missing in the lists of American offerings. Yet the marvelous progress achieved in the U. S. A.; the large sums annually expended on experimental and research work; the stupendous amount of capital already invested, and apparently still available for future investment in this industry, make us wonder whether, with continued effort and success, the dye-

stuff industry in this country will not at least be able fully to compete with the German monopoly—if ever the same returns to pre-war production quantitatively and qualitatively.”

“If ever the same returns to pre-war production. . . .” That “if” is only too plainly an assault upon what everyone knows to be the truth—which is that the German dye industry is arming itself for greater conquests than ever before, that it has intentionally concentrated in the past year or so on colors already made by American firms to the exclusion of the rarer dyes not yet produced, and that it is fundamentally as strong or stronger than before. The report endeavors to interpret the Badische statement so as to portray the German dye barons huddling together in a frightened group for mutual protection against the coming onslaught of the rapacious and formidable American industry, whereas it is simply organizing for more powerful attacks upon the dye markets of the world.

Further, the report goes on to say: “We could not state the facts and actual situation obtaining in the U. S. A. dye industry better or more clearly than to quote from the following report (published October, 1920) by the U. S. A. Government itself.” Then follows that portion of the statement of the Bureau of Foreign and Domestic Commerce, which appeared in “Commerce Reports,” which begins: “With the return to peace it is evident that whatever the demand for dyes made in Germany may be, that country will never again

regain its lost supremacy in the world trade in dyestuffs.”

It will be recalled by REPORTER readers that in the issue of October 18, under the heading “Statisticians as Commentators,” the fallacies in this bit of Governmental misinterpretation of sound facts were pointed out at some length, and at that time the prediction was made that it might well cause much harm to the country if taken literally by too great a majority of those who can see no reason why the American dye industry needs rigorous protection. For the conservation of space we refer readers to that editorial, remarking in passing that here is a concrete example of some of the mischief already caused.

Believe us, gentlemen of the Wetterwald & Pfister Company, you *could* have stated the actual situation obtaining in the U. S. A. dye industry much better—very much better indeed—and much more clearly and truly, either by considering the *statistics alone* of the Government report which you quote, and drawing the obvious conclusions therefrom, or by quoting from the report of the U. S. Tariff Commission, which has made a closer study of the dye industry than any other official body—and which is just as impartial as the Department of Commerce.

The instincts which led you unerringly to seize upon and make use of the one unsound Government document relating to the American dye industry when your judgment, if you read the Dye Census, must have told you that it was unsound, and which led you to

place in capitals the words "never again" in the opening sentence without explaining that the capitals were *yours* and not the Government's, are plainly revealed in your handling of the material contained in your report.

And they are not instincts, gentlemen, which will lead you ultimately to any destination worth arriving at in the general scheme of things in the American dye industry. Every man is entitled to his opinion, but it would seem as though you were going rather astray from the true path which all must tread before they can win for themselves and for America complete independence in the coal-tar chemical industries, and upon which independence your future depends no matter what department of these industries—importing, manufacturing or consuming—you may choose to engage in.

MEADE AND HARRINGTON TO HEAD NEW DU PONT DYE-STUFFS DEPARTMENT

E. I. du Pont de Nemours & Co., Wilmington, Del., makes the following announcement of changes in organization, which were effective February 1, 1921:

The miscellaneous manufacturing department will be discontinued; substituted therefor within the production department two new departments are created, to be known respectively as the dyestuffs department and the paint and chemicals manufacturing department.

The dyestuffs department will be in charge of C. A. Meade, vice-president, with W. F. Harrington as director. The dyestuffs sales division and the dye manufacturing division have been transferred without change of personnel to form the selling and manufacturing divisions of the new dyestuffs department.

The paint and chemicals manufacturing department will also be in charge of C. A. Meade, vice-president, with Hunter Grubb as director and E. C. Thompson as assistant director.

R. W. Sample has been appointed manager of paint and varnish sales,

Eastern division, with headquarters at Thirty-fifth Street and Gray's Ferry Road, Philadelphia, Pa. The sales of paints and varnishes will be consolidated under Mr. Sample at Philadelphia for all of the company's selling branches, with the exception of Boston, Chicago, New York and San Francisco. The railway, industrial and architectural representatives of the paint and varnish section will also report to Mr. Sample.

WEBSTER WILL RESUME PATENT LAW PRACTICE

Bradford Webster, of 141 Broadway, New York, announces that he will resume actively the practice of patent and trade-mark law, remaining president of the Dye Exchange Corporation.

He will have an office in New York and Louisville, and in Washington will be associated with E. W. Bradford and Frank W. Dahn. Mr. Bradford is nationally known as a patent lawyer of Indianapolis and Washington. Mr. Dahn has been in the Patent Office many years and was principal examiner in charge of textiles and textile machinery.

All classes of patents will be handled, including chemical patents.

S. R. DAVID RE-ELECTS OFFICERS AND DIRECTORS

At the annual meeting of S. R. David & Co., held February 1, 1921, the following officers were re-elected: President and treasurer, Sydney R. David; vice-president, Frank L. McCool; secretary and clerk, M. M. Flynn.

The following directors were also re-elected: Sydney R. David, Frank L. McCool and George H. Ashton.

The improvement taking place in the textile industry is being reflected in the increasing sales of the dyestuff makers; for instance, the Atlantic Dyestuff Company's sales of dyestuffs and intermediates for January were 76 per cent greater than for the month of December, 1920.

NORTON RESIGNS FROM NATIONAL

A. L. Norton, for some time manager of the Boston office of the National Aniline & Chemical Company, has resigned his position. Mr. Norton was associated with the Schoelkopf Company before the formation of the National Aniline & Chemical Company, and was one of the original officers when Schoelkopf-Beckers and the Benzol Products Company merged to form the National company. It is reported that Mr. Norton intends to go in the dyestuff business in Boston on his own account.

DYEING WOOL AND COTTON GOODS

By JOSEPH LOEBL

PREPARING GOODS FOR DYEING

The purpose of dyeing a piece of cloth is not only to give the fibers a certain color but also to fasten this color in and on the fibers. A piece of goods can be considered to be dyed properly only when the dyestuff has penetrated the fibers and has been more or less permanently fixed there. It should be absolutely clear, therefore, that if the fiber is not completely freed from all impurities previous to dyeing there will be hindrances that will impede the penetration of the fibers by the dyestuff or that will make penetration impossible.

As a rule woolen material contains fatty substances and metallic soaps

which adhere to the fiber and make penetration of the dyestuff difficult. Also, when these substances are present, the dyestuff cannot be fixed in and on the fiber to the same degree that it can when the fibers are clean. Therefore, if the dyer desires to do good work he must first free the wool fibers from these impurities before he starts the dyeing process.

An even absorption of the dyestuff by the fibers is possible only when the goods have been prepared previous to dyeing in some such manner that all portions of the goods are equally fit to receive the dye. To obtain such a result it is absolutely necessary that the water used for cleaning and rinsing the material be clean and free from substances that make water "hard." These metallic salts, unless removed, combine with the fats and form insoluble soaps on the fibers. Further, not only is it necessary to wash wool material with soap previous to dyeing but it is also necessary to remove all traces of soap from the goods before the dyeing operation is commenced.

Goods that have been dyed and are uneven in color may also undergo a cleaning process before redyeing. In this case treatment in a weak muriatic acid bath for fifteen minutes will remove the insoluble soap. By this treatment the greater portion of all insoluble substances are changed to soluble ones and may be removed by the simple process of rinsing in water. Some of the fatty acids remaining simply adhere to the fiber and may be removed

by rinsing the material through a bath containing soda and ammonia. As a final precaution the material may be given a treatment with fullers' earth. This will remove the last traces of all impurities that may still adhere to the fibers.

DYEING HALF-WOOL

Mixed woolen goods are usually manufactured by mixing, before combing, of differently colored wools in the loose state. This is particularly true when the finer grades of cloth are to be woven. Cheap materials are, however, employed and as the raw material is usually made of virgin wool and shoddy, with varying amounts of cotton, the subsequent dyeing operation must be so conducted that the material will be colored evenly.

Some cloths of this class are woven with cotton warps and shoddy wool weft and cannot, therefore, escape the designation of "half wool." When a material such as this is received it is essential that the cotton warp be dyed as deeply as the wool, otherwise the fabric will appear impoverished. Such cloth may be dyed a solid color or one color may be dyed on the wool and another on the cotton.

In dyeing cotton and woolen material a careful control of the temperature is essential to a good quality of work. Many dyers do not understand the relation of temperatures to the results they secure and as a result they make many mistakes. As a rule the temperature of the dyebath should range from 90 to 112 deg. Fahr., depending upon

the depth of shade required and the goods should be allowed to remain in the bath for from forty-five to ninety minutes.

Some of the dyestuffs that are particularly suitable for dyeing the wool of half-wool goods are given herewith: Azo Yellow G, Fast Wool Green B, Acid Blue N Extra, Indian Yellow G, Brilliant Acid Green 6B, Acid Violet 4B Extra, Fast Red A, Orange R, Benzyl Blue B, Benzyl Green B, Acid Violet 6BN, Brilliant Milling Green B, Formyl Violet 10B. It may be stated that in its properties Azo Yellow G is identical to Indian Yellow G. In so far as results are concerned Fast Wool Green B is the same as Brilliant Acid Green 6B and Brilliant Milling Green B.

For the dyeing of any cotton that may be present in piece of goods only such dyestuffs that can be applied from a neutral bath, either cold or slightly heated, should be considered. Those fulfilling these conditions are Chrysophenine G, Chloramine Orange, Benzo-purpurin 4B and 10B, Diamine Blue 3B, Diamine Black BHN, Naphthamine Green AN, Milling Black L, Naphthamine Brown H, Naphthamine Black AB Extra and RE.

It is the custom to dye the wool first with wool dyes from a neutral bath at a moderate temperature and then cover the cotton present by working in a cold neutral bath. An example of how a gold-brown mixture is obtained in one bath is given in what follows. We will assume that the goods weigh 100 pounds:

Prepare the dyebath with ten pounds of Glauber's salt, two pounds of Azo Yellow G, twelve ounces of Orange R, five ounces of Benzyl Blue B, Direct Black GNR. The temperature of the dyebath is kept at a temperature of about 100 deg. Fahr. and the goods are dyed for from forty-five to ninety minutes.

For an olive mixture on 150 pounds of material the following formula is used: Fifteen pounds of sulphate of soda, one pound of Azo Yellow G, three and one-half ounces of Orange R, eight ounces of Fast Wool Green B, one pound of Direct Cotton Black E, one

and one-half pounds of Union Black. The goods are dyed for from forty-five to ninety minutes at a temperature of 135 deg. Fahr. In this case the addition of the Union Black serves to saddle the color of the wool and to give the right tone. The cotton Black does not color the wool under the conditions named.

For dyeing a yellowish drab on 100 pounds of material the following formula is used: Ten pounds of sulphate of soda, 0.9 of an ounce of Azo Yellow G, 0.45 of an ounce of Orange R, eight ounces of Chrysophenine G, four and one-half ounces of Chloramine Orange, eight ounces of Direct Black GNR. The goods are dyed for forty-five minutes at a temperature of 90 deg. Fahr.

When attempting to produce many light shades on half-wool goods it often happens that the ground color, caused by the presence of the colored shoddy, is too deep to admit of reaching the desired shade. In this case it is usual to dye the wool with dyestuffs yielding very clean and bright shades with the addition of sulphate of soda at a temperature of about 112 deg. Fahr., and to top the cotton portion in a washing machine in a short bath with suitable substantive dyestuffs. In the latter operation a proportion of soda should be added to the dyebath to prevent the wool taking up the dyestuff.

Mixture shades of black and white are produced by employing a weft composed of an appreciable mixture of a black and a white wool and for the warp white or gray cotton. When dyeing this class of goods in the washing machine Direct Black E and soda are used, the goods being run in a strong bath for about two hours. The addition of soda, as already mentioned, pre-

vents the white wool from becoming colored by the treatment. After the cotton portions are topped the cloth is washed for thirty minutes and then submitted to the usual subsequent processes for the purpose of finishing.
(To be concluded) "

Dye-a-Grams

"England Acts!"—"Reporter" headline. Apparently, then, our Senators in Washington are only "acting"!

—O—

"Happy New Year; Get Busy at Once!"—Another ditto. A lot of us would like to, dear Ed.—but can't!

—O—

'Member that old-fashioned "low" neck and the slit skirt? Not in it to-day are they! Tame, we'll say.

—O—

American imports of dye-stuffs the other fellow's pocket. Tell it to your Senator!

—O—

This department hopes that after March 4 Mr. Burleson will get a job for which he is fitted—that is, if such a thing be possible!

—O—

"Fast: Permanent; not liable to fade, as a color. (Webster)"—"Reporter" adv. From the definition we should judge that this man Webster, also, knew the value of the word "liable."

—O—

A man can't eat an egg nowadays without feeling that he's swallowed the price of a ton of coal.

—O—

"Preparing Artificial Silk for Loading and Dyeing"—"Reporter" headline.

Which causes us to opine that with this same silk there's been too much "unloading" and not enough "preparing."

—o—

The value of whiskey is whatever a man is willing to pay, *plus* the chance he takes!

—o—

There is not much difference between paying an income tax and getting your teeth pulled. Let 'em tellya what they will, neither is painless.

—o—

We can well understand all this talk about "open shop," when so many are closed!

—o—

If a man drinks, it's his own business—but only when it doesn't interfere with someone's else!

—o—

That which we get for nothing is seldom worth it!

—o—

And did you ever stop to think that we can't have a thaw without a preliminary freeze-up? But New York is different from the rest of the world. It did.

—o—

Dr. Beil declares that fish talk to each other. Must be like the conversation two efficiency experts would carry on!

—o—

A New York minister tells the world that the Devil likes painted cheeks. Well, all we gotta say is, the Devil has mighty poor taste! (It was probably more propaganda against American dyes, eh, G. E. T.?—Ed.)

"The Room that Makes an American Dye Industry a Fact"—*"Reporter" adv.* We need no claivoyant to tell us that the room's *not* located in Washington, D. C.! G. E. T.

NOTES OF THE TRADE

To make chemicals, dyes, etc., Otto Hermann has incorporated under the laws of New York. Headquarters will be in Queens, and the capital is \$10,000. The incorporators are announced as M., A. and O. Hermann.

With a capital of \$5,000 the Globe Extract & Color Works have been incorporated under the laws of New York. The firm will act in the capacity of chemists and druggists, and headquarters will be located in Brooklyn. The incorporators named consist of I. L. Strein, I. L. Fink and J. Cooper, all of Brooklyn.

Announcement has been made by the Franco-American Chemical Works of Carlstadt, N. J., to the effect that this company has increased its capital from \$100,000 to \$250,000.

Adolph Hirsh, formerly of Heller, Hirsh & Co., and since 1915 secretary and director of G. S. Alexander & Co., Inc., has severed his connection with that firm, and contemplates, after a brief rest, starting in the fertilizer and chemical brokerage business in New York City on his own account.

EXPORTS OF SILK FABRICS FROM YOKOHAMA

Figures given in the Japanese-American Commercial Weekly show that exports of silk fabrics, including habutai, from Yokohama during the first eight months of this year amounted in value to 119,999,946 yen, of which habutai is represented by 71,400,074 yen. This total shows a decrease of 42,476,463 yen compared with the whole of last year but an increase of 2,467,125 yen as against the whole of 1918. Silk fabrics now rank next to raw silk in the list of exports from Yokohama.



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The Choate Speech

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Mr. Choate's Lesson

An Editorial

Foreign Trade Opportuni- ties

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

New York, February 21, 1921

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THE CHOATE SPEECH

**"Shall America Remain the Only Important
Country at the Mercy of the German Chemists?"**

WE present in this issue a part of the address delivered last week by Joseph H. Choate, Jr., counsel for the Chemical Foundation, under the above title before a meeting of the National Civic Federation, in New York City.

The speaker declared that his subject would probably cause those present to ask whether we are in fact, in this country, at the mercy of the German chemists. "And there is unfortunately no doubt," he continued, "that we are."

He then explained to his auditors the difference between inorganic chemistry, in which we can hold our own against any foreign competition, and organic chemistry, and rapidly outlined the vast scope and complexity of the coal-tar chemical industries and the dye industry in particular, in order that our shortcomings in this respect might be the better comprehended. The tremendous advantages which Germany's long experience gives her in the struggle for supremacy he duly emphasized in order that the most important factor in the task of the Americans, namely,

the time element, might be clear. As an example of the hopelessness of substituting anything else for actual experiences, Mr. Choate cited the instance given in the testimony of Mr. Klipstein before the Senate committee, wherein that manufacturer's yield was brought from only 10 per cent up to 80 per cent—the maximum—after a year of vain experimentation, by the chance increasing of the revolutions of the paddle which stirred the mixture from 60 to 65 per minute.

"At sixty revolutions per minute he got 10 per cent; at sixty-five he got 80," said the speaker. "That kind of knowledge is not in the books, cannot get into the books and never will. It is in the hands of the foremen who have stayed in the same place and watched the same reaction go on for years."

From this point we give Mr. Choate's speech in full:

For that reason the American industry, although amply provided with the most skilled research chemists, cannot by any possibility hope to rival the Germans as a commercial

matter, even if the cost of materials were equal, or the exchange problem were out of the way, even if every other element that goes into the problem were favorable, until they have had time, and by time I means years, in which to study the problems of practical manufacture. . . . American chemists need time and must have it, if this industry is to survive. Now, why should it survive? It is important, of course, that our three billions of dollars' worth of products that depend on it should not any longer depend on the Germans. It is important those products should not be placed at the mercy of an industry which is practically organized as a part of the German Government. I say to you that their importance is not a fraction of the vital importance to the country of this industry. In the first place, I think you probably all know that the dye industry is interchangeable with the explosive industry. I won't go into that any further than to say that in the case of one important dye, sulphur black, with which three-fourths of our stockings are dyed, the whole process of its manufacture is the same up to the last point with the manufacture of picric acid, which is one of the two great shell fillers used in the war. By varying the last process to a slight degree, you can get either sulphur black or picric acid to blow up the opposing trenches. In the same way, TNT is almost produced in the manufacture of a large number of different dyes. You can turn a dye works, a large dye works, over night into an explosive factory, and get all the explosives you need, and so if you have a full grown dye industry in time of peace, you need never maintain any supply of explosives or explosive factories, or bother about having a trained force of explosive employees and engineers and chemists who are especially experienced in that line.

The World War began as 100 per cent an explosive war. It ended as a 55 per cent chemical war. At the end of the war more than half the shells fired were filled with poisonous gases.

The Germans made every pound of their poison gases in their dye works. They had factories ready to their hand, they had the men and materials; they had everything.

Chlorine and Phosgene, the two gases they began with, were normal materials of dye making, and they had them in stock, in quantity. They had men who knew how to make them, and men who knew how to use them. And under cover in the dye laboratories they conducted researches that resulted in all the rest of their poison materials, and which were resulting, as the war went on, in the production of new and more deadly materials, which, in one case at least, that I know of, had they been able to develop a proper method of applying it, would probably have altered the outcome of the war.

Now, so much for the attack side of chemical warfare. How about the defense? Where did the Allies stand when the Germans made the first gas attack? They stood on the very edge of utter defeat. Had the Germans known the value of their new experiment, had they prepared it in advance on a large scale and driven it home ruthlessly, the defeat of the Allies would have taken place then and there irretrievably. But, by the grace of God, they did not know it.

Now, what saved the Allies? Improvised gas masks were rushed over in thirty-six hours by the British chemists. But those gas masks were nothing, to all intents and purposes, but handkerchiefs steeped in sodium chemical.

Every new poison devised had to be met on pain of instant and total defeat by a gas mask capable of resisting it. How in Heaven's name are we going to resist attack of that species unless we have instantly available the most highly trained chemists in the world in that field, and where are they to be found except in the dye industry? The answer is: Nowhere. The Germans had them at all times, and had they realized it earlier, before we, by building plants, costing tens of millions and

placing in the works chemists who could be ill spared from other things, they could have won the war "hands down."

Now, where are we at the present time? We have developed a dye industry which is far in advance of any other in the world outside of the German industry. We have made now, in actual manufacture, practically all things needed in the country and made them of the highest quality. There is really no question of quality in these things, because they are definite chemical substances, and if you get them they are just as good, whether they are made in Germany or in Hindoostan. Now we have got them. We have got practically all that are required. The few remaining exceptions are just on the point of being placed on the market. In other words, we have an industry to-day which can furnish us what the German dye industry furnished the Germans.

And the question is, are we going to keep it? Consider this question with reference to the great Continental world to-day, the cry of the world for disarmament, for relief from those intolerable burdens, those burdens hardest of all to bear and the most dangerous to the bearer. How are we going to disarm under the present conditions? Clearly the disarmament is limited by national defense. No nation worthy of the name would disarm beyond the point at which national defense is in peril. How can any of us disarm if Germany be left armed? And as long as Germany maintains a dye monopoly or is in a position where she may regain it, and she has an armament superior to any other nation, and as long as she retains it, that industry, active as it was at the end of the war, she will remain dangerously armed, even if we destroy every gun, tank, every 'plane, every rifle, and every ship in the German Empire.

At the very outset of the chemical warfare the chemical attack was practised without the use of any other weapon. The first gases were merely blown down upon the British by the

force of the wind, after being released from compressed cylinders. Later, most of the gas was distributed by shells from guns. Towards the end, the development was back again towards methods of application that had nothing to do with guns, or any other weapons. To-day projectors exist which can be made in any tube works in quantities, at small cost, without changing the works, which will lay down any quantity of gas you like at a distance of a mile. Accordingly, an otherwise unarmed nation is to-day in a position to develop a chemical attack which, against a nation not chemically armed, will be simply undefeatable. The Germans are in this position. Heaven alone knows what devilish contrivances they have up their sleeves. We do know, as I say, that if we destroy every gun they have they will still be in a position where they can launch a deadly attack against any other nation, armed or unarmed, so long as they retain their chemical facilities. To-day we are in that same

happy position; and so, too, to a certain extent, are the British. The French are approaching it. But our chemical industry is by far the best of the lot. To-day, if all our guns and 'planes and tanks and rifles were destroyed we would also be able to carry on a chemical warfare as well as anybody else, or very nearly as well. But if we lose our chemical industry we lose that advantage. The British do not mean to lose it. They have passed an Act of Parliament totally excluding all German dyes except such as may be licensed for importation, and they license only those not made in Great Britain. The result is, any British dye user can get any dye he needs, because if it is not made in Great Britain he can import it. The French have adopted the same system as regards German dyes.

We have a bill now pending before Congress, known as the Longworth bill, which passed the House nearly two years ago, was unanimously reported by the Senate Finance Committee in an improved form more than a year ago, and is now languishing in the Senate as a result of a filibuster by two of the distinguished Senators. If we do not pass that bill our industries are as certain to be destroyed as it is certain that the sun will rise to-morrow. The Germans are dealing with a cent-and-a-half mark. That mark, which buys only a cent and a half in gold and foreign exchange, buys at least five or ten cents' worth of goods in Germany, particularly of labor. They have an industry there in Germany, equipped to furnish the whole world, which cannot possibly be run at a profit unless it does furnish the whole world. They have invested in that industry \$500,000,000 of real gold. That is what is at stake. They have the enormous advantage of the skill and experience that I have pointed out. They have not, and they never have had, any more conscience than—I was going to say a tomcat, only I don't want to insult the tomcat! They have no more conscience than a grafting policeman. All through the period before the war they bribed, as a matter

of course, every dyer in every American textile works.

They practised every form of commercial corruption known to man. Do you think they are going to stop it now, when they have at stake the possibility of regaining the world monopoly that would put them back on the map as a power in the world, and when if they do not regain it they lose their most lucrative industry, sacrifice the \$500,000,000 of real assets, lose their best exporting industry, and see grow up in the world opposed to them one, two or three opposing chemical industries which make automatically one, two or three great opposing powers? I say here, ladies and gentlemen, with the utmost confidence and with sincere belief, that in a disarmed world the dye-making nations are and must be supreme, and unless you want the United States to revert to a condition of subserviency, to a condition where she will be at the mercy of any dye-making industry, you have got to see to it that your servants there in Washington protect that industry. It cannot be done by the tariff, because the Germans have too much at stake and can safely spend the money necessary to introduce a tariff war with any quantity of dyestuffs needed to kill the American industry. It can be done by the measure now before Congress; and it is up to us, if we want our country to be safe, if we want a vital industry to be preserved, to say so and to say it so that our servants there in Washington cannot mistake our utterances.

There is only one way it should be done: Write to your Senators and Representatives. That is the only thing they understand.

The Senator who filibustered most strenuously against the bill was Senator Thomas, of Colorado. He spoke seven and one-half days in the last session, and that was all the time the Senate had to give to the dye industry; and I think they were right. But he would have spoken for seventy-seven and one-half days if he had been given that length of time; and the other Senator who was opposed was Senator Moses.

He didn't actually take part in the filibuster.

Perhaps I should give more in full why the tariff will not protect. The root of that reason lies in the complexity of the industry. One of the great American dye works, the largest, makes perhaps 250 different colors. It could easily make 2,500, but the effort has been to confine itself to really necessary colors and not to make things that are not essential. Of these 250 colors, I suppose the profits of the institution have been on perhaps ten. We will say that only 100 are made in small quantity, as incidental by-products, and sold at small prices because the demand is not great. We will say another hundred are made by other people and there is tremendous competition, so that the prices on them are not high. On those few products which each company makes, and which nobody else makes, or which they make better than anybody else, their profits depend. Now, all the Germans have to do is to take some part of the surplus which they have of the particular colors which they know to be the basis of the profit of that particular company, send over ten or fifteen thousands pounds of each of those, and sell them for less than they cost. Now, Heaven knows what the German costs are! Probably low enough. But if they paid people to take it, and if in addition they paid a thousand per cent duty, it would still be a matter of only hundreds of thousands of dollars, not millions, to put out of business by such a selective attack any one American company, ever the greatest.

Now, it would only take three shiploads of three good ships to supply the entire American market with dyes for a year. The Germans made perhaps four times or five times the total American consumption each year. When I was in Paris in December there came from the German dye trust a bitter complaint that the Allies were not taking all the dyes which they were entitled to take under the treaty, and that, accordingly, the storehouses of the German dye works were getting

clogged and they could not do business, and—wouldn't we please take some more? Accordingly, it is perfectly apparent the German dye houses are stocked up and that they cannot readily sell all they make even now, when they are working at half-capacity. They stand ready there to launch a flood upon this country if we allow them to do so. Up to date we are protected by the continuance of the War Trade Board Section's licensing scheme, which is precisely like that under the British bill, and which lasts as long as the Trading with the Enemy act lasts, and no longer.

Try to protect the industry by the tariff only and you will have the German trust fighting for its life, utterly desperate, caring nothing for morals or conscience, sending carefully selected consignments of goods into this country designed to put out of business first one and then another of our manufactories, and so destroying in a very few months the industry which

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A. P. HOWES, President
LAURANCE T. CLARK, Editor

MR. CHOATE'S LESSON

It was a valuable contribution to public testimony on the true role of the dye industry in our economic and military life, and the vital significance of the Dye bill to every American, which Joseph H. Choate, Jr., made last week, speaking as counsel for the Chemical Foundation before the Twenty-first Annual Meeting of the National Civic Federation at the Hotel Astor. And we would like our readers all to mark well the fact that one of the points emphasized by him was the necessity of writing to our representatives in the Senate, which, as Mr. Choate declared, and as we have tried hard and repeatedly to drive home in these columns, is one of the simplest and surest methods of lending weight to this or any other plea.

"Shall America Remain the Only Important Country at the Mercy of the German Chemists?" was the general question under which Mr. Choate elected to deliver his remarks, and to our way of thinking his discourse was both timely and effective because of the lucid manner in which the "why" of the Longworth bill was explained to an audience consisting entirely of the "general public." That is what is so badly needed right now, even more than further explanations to Senators.

If the citizens of the United States saw another country, possibly belligerently inclined, in possession of a huge army and navy, while this country had but one or two ships and only a handful of trained soldiers, there

would be an immediate demand for the introduction of a bill to remedy these deficiencies. And if that bill was not speedily enacted and put into operation, there would be enough impeachments within a week to keep the Supreme Court judges busy for the rest of their lives. But when Congress, to the accompaniment of much offensive barking and braying, aimlessly and futilely worries a measure like the Dye bill back and forth for nearly two solid years, there is never a protest from the worthy citizenry. Why the weird contrast? Because in the first instance the need is plainly apparent and can be understood by all, while in the second the need, just as great, is not in the least apparent to any layman, being too new for the public to have become educated into seeing it. Give this information to enough people and before a month has gone by the Senate will be terrorized into giving the Dye bill the attention which it even now knows full well its real duty demands. Mr. Choate made the need plain enough to a large number of people last week.

No matter how familiar you may be with the facts, you cannot do better than to read carefully those portions of the speech of Mr. Choate which are printed this week in the leading article. You will be interested, primarily, to see how well he put the situation before a group of non-technical people—a most difficult task—and next you will probably file away in your mind for future use what he has to say about the German hat still being very much in the benzol ring, so to speak. Quite apropos of Mr. Choate's illuminating remarks in this connection is a Paris despatch which has made its appearance in the daily press as follows:

"Germany is now exceeding her pre-war production of coal-tar dyes, according to the dye experts attached to the Reparations Commission, and by the end of the current month (February) will have surpassed any previous monthly production of fire chemicals.

"Dyes produced during January are

estimated at 12,000 tons, or 750 tons more than the average output before the war."

There is something for those who have been trying to picture the German dye industry as being a back number to reflect upon. Mr. Choate gave a selected portion of the public a clear lesson on the facts that time is needed to develop a dye industry, that the dye industry is a necessity to us, that no tariff will avail to secure it for us, and that Germany is not only anxious but well able to rob us of it unless restrained.

If he succeeded in making only that final fact stick in the memories of his hearers, the opponents of licensing will have been shorn of one of their pet arguments for good and all, so far as Mr. Choate's audience is concerned.

In September and October next an extension exhibition and market for textile goods will be held at the Crystal Palace, London.

ARGENTINA WANTS COLORS AND FLAVORS FROM U. S.

After investigating the candy industry in Argentina, Trade Commissioner Smith concludes that flavoring extracts and coloring matter are the only articles which can be profitably sold to the Argentine candy manufacturers by the American exporter. The sugar consumed is home-grown, while the cacao bean comes from Brazil or other producing countries.

Two large and modernly equipped factories in Buenos Aires devote a large part of their facilities to the production of bonbons, chocolates and cocoa in various forms. The candy is mostly of hard sugar, although chocolate drops and similar types of confectionery are now being developed to compete with imported goods. A list of candy manufacturers in Buenos Aires may be obtained upon reference to file No. L. A.-10019, Bureau of Foreign and Domestic Commerce.

THE CHOATE SPEECH

(Concluded from page 9.)

only by a miracle of achievement has been created in the last five years. There is only one way to stop it, and that is by prohibiting altogether, for a time, the importation of those things which are made in this country, or those things which serve no other purpose than as substitutes for things made in this country. That is what the bill now before Congress seeks to do, and you can readily see there is no other way in which it can be done. The dyes are too closely interrelated for you to separate them out and load a prohibitive duty on some and not on others, because their chemical connection is so close that it would be the easiest thing in the world for the Germans to evade. Instead of sending in here the things the high duty was levied on, they would send the same things almost completed. An instance will perhaps make clear to you what I mean.

In the elaborate and complicated process of making indigo it arrives at a substance called indoxyl after something like ten complicated reactions. Indoxyl is no more like indigo than I am like that chair. But it turns into indigo when you place it in a vat and blow air through it. Now, the substance would be brought here in that state. The air would be blown through it in this country and so the high tariff would be worthless. There is no other solution.

There is no serious opposition to it except among three classes: First, the Germans themselves—we can disregard them; second, a very few selfish manufacturers who, as one of them said to me once, propose to get their dyes as cheaply as they can be got, no matter where they come from or who makes them. One of the greatest manufacturers in New Hampshire said that to me himself. He is almost alone in his business of cotton manufacturing. The rest have mostly signed a petition for this relief. Then, there is the third class, consisting of the hidebound protectionists who can see nothing but the

tariff as a means of saving any American industry. The bill before Congress is what we need.

FOREIGN TRADE OPPORTUNITIES

Names and addresses of any of the firms mentioned below may be obtained by direct application to the U. S. Bureau of Foreign and Domestic Commerce, which compiled the list, or any of its district and co-operative offices. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers. Applications for particulars should refer to opportunity numbers; and in case information is desired regarding more than one, inquiries should be made on separate sheets.

34377—An importing firm in India desires to be placed in communication with exporters of general merchandise, sundries, and particularly *aniline dyes*. Reference.

—o—

34402—An agency is desired by a merchant in Argentina for the sale of agricultural implements, hardware, *heavy chemicals, dyestuffs*, cutlery and foodstuffs. Correspondence should be in Spanish or French. References.

—o—

34361—A commercial agent in England desires to secure the representation of American *textile firms* for the sale of their goods in that country. References.

—o—

34311—The representative of a merchant in Chile is in the United States and desires to purchase *dry goods, hosiery, textiles, underwear, haberdashery, cheap jewelry, and novelties*. Terms: Cash. Reference.

—o—

34323—A mercantile company in England desires to secure an agency from manufacturers for the sale of *cotton, lisle, artificial silk, and pure silk hosiery, half-hose, and socks*. Reference.

—o—

34376—A firm of commission mer-

chants in Palestine desires to purchase old newspapers for use as packing and wrapping paper, leather, shoe findings, foodstuffs, office supplies, and *cotton goods*. No reference offered.

—o—

34396—A mercantile company in Portugal desires to secure an agency for the sale of *raw cotton*, *chemicals*, toilet articles, and cask staves. References.

—o—

34408—An importing company in Belgium desires to purchase *raw cotton*. Quotations should be given c. i. f. Belgian port. Payment, cash against documents. Reference.

—o—

34386—A co-operative association in Spain desires to purchase on consignment *textiles*, *knit goods*, *hosiery*, *silk*, *cotton thread*, and hardware. Quotations should be given c. i. f. Spanish port. Correspondence should be in Spanish. References.

—o—

34315—An importing firm in England desires to purchase or secure an agency for the sale of *chemicals for use in tanning* leather and rosin. Quotations should be given c. i. f. Indian port. Payment to be made against documents at destination of goods. References.

—o—

34372—A merchant in Argentina who has conducted a ladies' tailoring establishment for several years now desires to expand and take over agencies for the sale of such goods as *women's suits*, *underwear*, *dress goods*, and allied lines. Reference.

—o—

34415—An importing merchant in Madagascar desires to be placed in communication with exporters and dealers in *cotton and silk piece goods*, *perfumery*, *glassware*, *enamel ware*, *hardware*, and *cutlery*. Catalogue prices, and samples, if possible, are requested. Reference.

—o—

34352—A merchant from Venezuela is in the United States and desires to secure an agency for the sale of leather

for shoes, *ribbons*, *flour*, *rice*, *textiles*, *dry goods*, *knit goods*, and also to secure the representation of an export commission house. Correspondence is preferred in Spanish. References.

—o—

34424—A firm of importers in Italy desires to purchase and secure an agency for upper leather, shoes, and manufactured articles in *silk and artificial silk*. Quotations should be given c. i. f. Italian port, or f. o. b. New York. Payment: Cash against documents, or through credit in American bank. Correspondence should be in Italian. References.

—o—

34419—A manufacturer in India desires to purchase *textile machinery*, and requests quotations and estimate for a *spinning mill* of 40,000 spindles and 1,000 looms, with preparatory engine, boilers, etc. The precise time of delivery of the machinery should be given. Payment: 50 per cent against documents and the balance six months after using the machinery, or sooner if so required.

—o—

34324—An importing firm in India desires to be placed in touch with manufacturers and exporters for the purchase of hardware, cutlery, machinery, electrical goods; *cotton-mill*, *gin*, *press*, and railway stores; glassware, kitchen and household goods, metals and metal products, pipes and fittings, boiler fittings, harnesses, motor cars, bicycles and accessories, watches and clocks, musical instruments, food products,

stationery, *hosiery*, second-hand clothing, *velvets*, *laces*, *piece goods*, *woolens*, boots and shoes, and sundries. Reference.

FRENCH SILK TRADE

Statistics published in *The Textile* on the total silk imports and exports of France for the first nine months of 1920 show that the imports of cocoons amounted to 169,700 kilos, and exports amounted to 57,300 kilos. Imports of silk waste and of combed waste silk amounted to 307,400 and 136,400 kilos, respectively, while the exports of these products amounted to 443,700 kilos of silk waste and 665,600 kilos of the combed waste silk. The imports of artificial silk amounted to 118,800 kilos as compared with exports of 71,700 kilos. The imports for silk in bulk, amounting to 7,388,000 kilos, were far in excess of the exports of 864,000 for the same period. Exports of spun waste silk for this period amounted to 437,600 kilos as compared with the imports of 242,800 kilos. In the wrought silk trade China was the chief source of supply, and imports from that country amounted to 1,911,200 as compared with Italy, which stands second as source of supply and furnished 694,600 kilos during the first three-quarters of 1920. Imports from Japan amounted to 422,500 kilos, and that from other countries to 490,500 kilos. The exports of this product amounted to 703,700 kilos.

IMPORTATION OF DYES AND DYESTUFFS INTO EGYPT

The amounts and values of dyes and dyestuffs (exclusive of natural and synthetic indigo) imported into Egypt,

says Consul Lester Maynard, Alexandria, for the first eight months of 1919 and 1920, respectively, were 104,700 and 189,400 pounds, valued at \$98,000 and \$146,000. Values are converted into dollars at the normal rate of exchange (20.23 piasters to the dollar). Dyestuffs are usually imported into Egypt by resident commission merchants.

A list of concerns in Alexandria that may be interested in the importation of these materials can be obtained from the Bureau of Foreign and Domestic Commerce or from its district and co-operative offices by referring to file No. NE-14006.

H. C. OF IMPORTED DYES IN CANTON HELPS SELL NATIVE COLORS

The high cost of imported goods, despite favorable exchange conditions, and the boycott of Japanese goods have acted as a stimulus to many native industries in the consular district of Canton, China. For example, the output of native woven and knitted goods was much greater in 1919 than during the preceding year. There are several hundred cloth-weaving factories in and around Canton using mostly wooden hand looms and employing in the aggregate between 20,000 and 25,000 operatives. It is practically impossible to arrive accurately at the value of their output, but a rough approximation places exports at about 35 or 40 per cent of the total output. During 1919 native cotton cloth of various kinds valued at \$572,081 was exported, as against \$683,073 in 1918, most of these exports being to French Indo-China and the Straits Settlements.

The scarcity and high price of imported dyes caused the native product to have an active year. The center of the native dye industry in this district is at Paklow, Kwangsi Province. Liquid vegetable indigo to the amount of about 9,000,000 pounds is produced during an average year.

ELEMENTARY KNOWLEDGE OF CHEMISTRY IN DYEING

The process of dyeing has now become an art on account of the colors and shades required, and the necessity of the dyer being well versed in colors and their peculiarities under differing conditions. This fact has necessitated the training of a number of persons as experts in the mixing of colors and the application of these colors or dyes with chemicals to produce depths of color or shades.

The dyer in the past had the bath prepared for him according to the formula recognized by the head of the department, and all he had to do was to watch the heat of the bath and length of time the goods were immersed in the liquor; the examination of the articles was finally done by the expert colorist, who was well acquainted with chemistry.

Now all this is changing, and operators wishing to make headway in the dyehouse and to prove their worth must treat dyeing as a fine art and not as a business only. As the present demand is for more variety in color than ever, it is imperative that we should apply ourselves to this work, which will give us distinct knowledge of color and the trained eye for discerning the correct shade required.

At one time it was thought that chemistry was the sphere of the chemist trained for the specific purpose of dispensing drugs for medical use, but many enthusiastic young men have taken a course in chemistry which has enabled them to treat the materials and liquids they use with a trained mind, understanding the actions of chemicals and the effect produced under certain conditions.

Many of the large towns have chemistry classes for students connected with industry, some during the winter months only, others continuing throughout the year. Then, again, the high-grade schools also have facilities for teaching the science of chemistry; and although the latter does not directly apply to dyeing of knitted fabrics, yet the fundamental principles of the action of chemicals, their composition and application, cannot fail to help considerably in the dyeing shop, should the student afterwards choose to enter this branch of manufacturing textile goods.

For present purposes we would urge upon all the younger members of our industry, no matter in what department they may be engaged, to acquire as much knowledge regarding chemistry as applied to the treating of fabrics as they possibly can. Many complain of their inability to get on, when the failure lies with themselves and the apathy they have shown to the opportunity to

obtain information regarding their business.

The successful man of the future will be the man who has equipped himself with that information which is not surface knowledge only, but fundamentals relating to the processes through which the goods or fabrics have to pass on their way to the sales counter, and not the least important operation is that of dyeing.

One of the chief features in the successful application of color is the knowledge of the action of chemicals on the fabrics made from wool, cotton, silk and artificial silk. These all require different treatment according to their constituent peculiarities.

The peculiarities are well known to the expert, but to the young and inexperienced worker they need to be emphasized. The first point to be observed is that wool contains a natural oil and this acts as a resistant to the dye liquor; if the fiber is examined under the microscope it will be seen that the dye remains more on the surface than it does on the cotton fiber, hence it becomes necessary to treat with mordants so that the dye in the liquor penetrates into the fiber.

This is one reason for the changing of the color after it has been in the sun, for if it could be examined after wear it would be found that the pigments used in the dye bath have become dislodged from the fiber, causing it to have the faded appearance; it has really lost some of the pigment applied to it in the dye bath.

The fact that wool and artificial fiber require different treatment to pro-

duce equal color is proof of the importance in obtaining the rudimentary knowledge which enables one to overcome the difficulties.

A fairly wide range of technical works on dyes and dyeing, also the use of chemicals in dyeing operations, are now obtainable; and if the utmost interest is taken in one's occupation it will be relieved of much of its drudgery.

Then, again, color purity is affected by atmospheric changes, and unless these are understood and counteracted disappointment is felt at the result. Brilliancy of color is obtained by application of chemical properties either before the dye bath by immersing the goods in the prepared liquor, or in the dye bath by adding the chemicals to the bath at the time of the dyeing operation, or after the process by addition after the dyeing has taken place in the dye bath, or after the goods have been removed; and then finally passed through a separate liquor, removing all unnecessary pigment from the fiber and chemical properties, fixing the color at the same time.

It has been recognized in the color-mixing business that the best results regarding brilliancy are obtained on a bright day. This may be accounted for by the fact that the atmosphere is lighter and allows the impurities in the air to rise, while the reverse is the result on a depression in atmospheric conditions.

Blues, yellows and reds, or shades of the same, must be considered on the result required, as to apply the chemical in the same strength to a light shade as a heavy color would be disastrous to the color. All these points, with others, are only elementary considerations, but are the determining factors between success or otherwise.

Too much emphasis cannot be put upon this important phase of dyeing; many do not take sufficient precaution to see that the temperature is taken just before the goods are immersed in the liquor. It should also be remembered that the bath temperature greatly varies from the temperature of the

goods according to the reading of the atmosphere, as the goods are lower in heat property on a cold day than a warm one; and it is sometimes asked, "How is it that I used the same proportions on that day as I have done this, and the results are not the same?"

It would be decidedly helpful if an analysis of the water of the district, and incidentally that used in the dyeing operations, was obtained, as the properties in the water largely influence the results. Some water contains minerals in larger proportions than others, while sulphur and saline properties are predominant in a greater or lesser degree.

The whole of these points enumerated go to prove the importance of the knowledge of the simple elements we are using in the industry and the absolute necessity of the mental equipment of fundamental principles which are only mastered by perseverance and the application of common sense in the materials we use and complete mastery over the rudiments of simple chemical treatment of various fibers under different conditions.

Thus, to know what is the cause of your difficulties you can then apply the chemicals to counteract them—this is "elementary knowledge," essential to success in the dyehouse.—*Hosiery Trade Journal*.

During 1919 the exports of raw silk from Canton to the United States amounted to nearly half the total exports of that commodity.

Dye-a-Grams

One might say that the "veiled" opposition to the Dye bill was also "strained."

—o—

"Mr. Carter to the 'Stand!'"—"Reporter" headline. A fit subject, we'd say, for Carter's Little Liver Pills!

—o—

From the way the Longworth bill has been manhandled one would conclude that Justice is not so blind but that she can wink one eye!

—o—

Mr. Carter is the kind of an American who would think that the soldier who fought to save his country should be well able to live on three cheers!

—o—

But cheer up! Eventually the bill will be passed—but not by choosing the Weeping Willow for our national tree!

—o—

Many people do not realize that when a man is out of work what he wants is work and not sympathy.

—o—

"The Room That Houses the Artificial Memory"—"Reporter" adv. Well, we've heard of artificial teeth, legs, etc., and we'd say there was plenty of room for artificial brains, even if they did turn out to be only memories.

—o—

The pessimist may find consolation in the fact that later on the country may be prosperous enough to sport a few strikes again.

A mouth that stretches from ear to ear cannot be compared with those that are open from year to year!

—o—

There are a lot of people in the world who will never think the world is getting better until it gets wetter!

—o—

We read that fashion predicts longer and fuller skirts.—Show's over—and a good thing for idle mills!

—o—

Inspired after a ride on a Detroit "owl" car: Lawyers, doctors and priests may know many secrets; but, believe us, so does the conductor of an owl car!

—o—

Here's the latest—

A Politician is a Man with a Job who wants a Position!

—o—

John Burroughs says a dog never smiles—meaning, we presume, that a dog would take a funny bone seriously.

—o—

We are at least getting a little "McCool" weather!

G. E. T.

A list has been prepared by the Far Eastern Division of the cotton spinning companies and factories in Japan, giving in each case, in addition to the name and address, the number of ring, mule, and twisted yarn spindles and the number of looms. This list is now available under reference number FE-11028, Bureau of Foreign and Domestic Commerce.

GEIGY HAS NEW BRANCH IN CINCINNATI

Announcement has been made by the Geigy Company, Inc., 89 Barclay Street, New York, to the effect that a new branch office of this concern has been opened in Cincinnati, Ohio, which is located at 232 East Pearl Street, that city. B. C. Blowney, who has for many years been active in the dyestuff field and whose acquaintanceship in the trade is exceedingly wide, has been placed in charge of the new branch.

NOTES OF THE TRADE

According to a Reuter cable from Cairo, published in London, "following the recommendation of a majority of the Provincial Councils, the Egyptian Government has decided to reduce the cotton acreage next season by one-third."

German residents in Japan are reported as steadily increasing in number, now almost double that of pre-war days. Most of them are employed in firms and factories as engineers, and it is stated that nearly a hundred applications for positions in Japan have been received from German engineers and experts. The imports of toys, chemicals, and dyestuffs from Germany during the first ten months of 1920 amounted to \$1,000,000.

The Imperial Gunpowder Industrial Company, Ltd., which was established in Japan in November, 1919, with a capital of 10,000,000 yen, is engaged in the manufacture of gunpowder, explosives, chemicals, and dyestuffs. However, according to Trade Commissioner Butts, quantity production is not anticipated until February or March. The company first planned to manufacture dynamite or guncotton in time of peace, to sell to the mine owners, but it has been decided to manufacture goods demanded by the naval department.



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By Raffaele Sansone

AMERICAN DYESTUFF REPORTER

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"Circulated Everywhere Dyestuffs Are Used"

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"DYES FOR DEFENSE . . ."

" . . . But Not One Tint for Tribute"—Ten-Minute Exercises in the Association of Ideas, for the Use of Busy Lawmakers and Prompted by General Mitchell's Testimony

YOU will find a good deal about airplanes, battleships, coast defense and other military matters of moment in what follows, and perhaps rather less about dyes than is customary; yet since the Senate, strange to say, does not act as though it intended passing the Dye bill this week, and the material to be given is not only exceedingly interesting in its own right but, in addition, contains a message of real concern to all of us, you may just possibly come to believe, with us, that your time has not been altogether wasted in perusing it.

Had it not been that the jolly old Congress of the United States of America, after treating the American dye industry like a poor relation for the past two years, had suddenly and with all the uniformity of design displayed by the average crazy-quilt taken up the question of national defense, thereby bringing before it for its further enlightenment, Brigadier-General William Mitchell, Assistant Chief of the Air Service, some valuable information about

modern warfare in general and the military situation of this country in particular might have waited a while longer for an airing—which would have been regrettable. But it did manifest a desire to interest itself in the question, and the General testified, and among the things which he made clear to our law-givers were the following:

That our present system of coast defense is at present pretty much obsolescent and soon will be altogether obsolete; that the mailed fist of yesterday is a joke when pitted against the mailed 'plane carrying a cargo of gas-filled bombs: that England has reversed her traditional naval policy in favor of becoming Mistress of the Air; that plenty of aircraft working in conjunction with mobile troops and their accessories is the only possible method of defending a seacoast against a modern attack; that a thousand airplanes can be built for the cost of one capital ship costing between \$40,000,000 and \$45,000,000; and, in short, that Congress had better give up relying

wholly upon the navy and long-range coast defense guns, and instead spend some of the money on the development of a first-class aerial defense, comprising 'planes and poison gas.

"We can easily lead the world," declared the General, "at a comparatively small cost. We have the men, the materials and the factories all within our own country."

That statement is to-day absolutely true. We have the nucleus of a capable, efficient personnel; we have always had the materials, and we have the factories. We have a portion of the men and the plants created by the War, and we have many more potentially in the American dye industry, also created by the War and kept alive solely because a technical state of war has been maintained between this country and Germany ever since formal hostilities were opened early in 1917. It would cost the Government—which means the taxpayers—a good round sum every year to keep in operation sufficient plants and research laboratories to guarantee leadership, and the Government—possibly because of muffled but perfectly audible rumblings from the aforementioned taxpayers—seems to be trying to reduce all costs to a minimum. But with or without rumbling, and with or without a sudden conscience-stricken zeal for economy, if it cost only \$1,000 per year to maintain them, why, that would be just \$1,000 too much if not necessary. Think of it! A thousand dollars thrown away that might go toward defraying the expense of printing additional substitutes for the Dye bill, or into an appropriation for the improvement of waterways leading to Senator Thomas' textile mills in Colorado!

And if, on the other hand, these factories and personnel should be allowed to grow up as part of a complete, self-contained coal-tar chemical industry, the expense which the Government would be obliged to pass along to the taxpayers as the price of leadership in the essentials

of gas warfare would be only a minute fraction of the sum required to hold such leadership as a purely military proposition. The Government of the United States, for some unknown reason, is apparently the only government left among world powers so lethargic that it has not sensed the fact that this is the first time in the history of modern civilization that, in practical effect, a peace-time market for war munitions has existed to a sufficient extent to allow their development and manufacture to continue year after year without putting a financial burden on the people. The American Indian got a goodly part of his living, through hunting, by means of the same implements that he went to war with, and hence he was always in a state of preparedness without being obliged to maintain one set of arrow-makers who did nothing but practice to preserve their proficiency in making war arrows, and another set to make hunting arrows. A war arrow differed from a hunting arrow about as much as the manufacture of explosives and poison gases differs from the manufacture of peace-time coal-tar products.

And so to-day, while we no longer live as the Indian did, being civilized and having most of our big game hunting done by machinery in Chicago, things could be to an extent the same as then in military affairs if Congress could manage to overcome its miraculous egotism long enough to peer across the Atlantic and see what its nearest white neighbor is doing.

"Is it not a fact," Representative Louis C. Cramton, of Michigan, wanted to know, "that in England to-day the great question is the reversal of their naval policy by reason of the possibilities of attack from the air?"

"It is absolutely the case," replied General Mitchell, "that England is seeking control of the air. The English air force has made several attacks in maneuvers against fleets, in which the air force has theoretically sunk the naval vessels.

"It is our belief," continued the General, "that in the next war gas might be used by a barbarous foe on the centers of communication. We know just how much gas has to be put down on these centers to interrupt communications. For instance, consider an area in the vicinity of New York ten miles by ten miles, or 100 square miles. If two tons of "crying gas" are dropped there by airplane or airship once in eight days it will make everybody wear gas masks and goggles. If we want to keep that place covered with mustard gas we can put down seventy tons once in eight days and everybody will have to protect himself against mustard gas in that area.

"If we want to use Phosgene and kill everybody in that area, we have only to put down 200 tons of Phosgene once in eight days and it will keep that area covered. The only protection against such a procedure is protection in the air. A few 'planes could visit a section several times the size of New York every eight days and wipe out the population. Control of the air is to-day more important than control of the sea. Our system of coast defense to-day is wrong. The only way to really defend a coast is with aircraft and with mobile troops and their accessories."

General Mitchell added that heavy artillery on an extensive scale is a waste of money—that ships will not expose themselves to guns on land which are in a fixed position, have a limited range, and are known to the enemy.

"You must remember also," he went on, "that these battleships cost \$45,000,000, and we can build a thousand airplanes for the cost of each such battleship."

This was borne out by Major T. H. Bene, in charge of the experimental engineering division at McCook Field, who said: "Whoever comes here with a naval force will have an air force with that naval force, and if we can stop the air force we can stop the navy. A well-developed air serv-

ice could protect the coast at much less expense than the cost of the navy." The Major then estimated that the cost of aerial protection for the coast would be \$10,000,000 for every 350 miles, as compared with \$40,000,000 and upward per 350 miles for naval protection.

General Mitchell then detailed the plans as follows: "What we need behind the Atlantic coast is a brigade of 600 airplanes—60 per cent pursuit, 20 per cent attack and 20 per cent bombardment; behind the Pacific coast a brigade of 600 airplanes similarly organized, and throughout the country in general an air division of two brigades of 1,200 airplanes that can be shifted either way, making an interior defensive force of 2,400 'planes."

The General proceeded to explain how an auxiliary force of aircraft would be apportioned and distributed, comprising in all 3,202 'planes—about the same air force France now has—but we will not burden the

reader further with this, although it is interesting. Something still more interesting was the statement of Representative Thomas U. Sisson, of Mississippi, when he said:

"If England has adopted supremacy of the air as the best policy, taking into consideration all the dangers of attack which she has on account of her proximity to what might possibly become enemy nations, it would simply accentuate the idea that the United States might make some investigation of the effectiveness of its defense through its air service, and, if not to do more than imitate, at least not to get too far behind in the development of that service."

By all means, Congressman! It is rather unfair to throw upon your shoulders all the weight of all the sins of the Government; but since you happened to speak for the Government at that particular time, why, then—there you go working up approval of an admittedly sound defensive measure after another sound defensive measure, even more vital, has been simply begging to be passed for nearly two years. There you go nodding your head and likely as not conjuring up a bill for military aircraft production, promptly conceived and speedily passed, quite forgetting that other bill, introduced so long ago, which provides for one of the essentials of the aircraft program—high explosives to blow up attacking battleships and poison gases to teach discretion to their crews—a bill which provides for these essentials at even less expense as compared with the aircraft program than the latter expense is less than that of the naval program. Is it because the aircraft idea has the charm of novelty, while the other grows boring—as reminders of a past fault are so prone to do?

Probably not that. It is more likely to be because you can see the connection between airplanes and defense instantly; the possibilities can take a firm hold on your imagination. The connection in the other case re-

quires diagramming and demonstrating, and even after it is all over there is no real association of ideas—nothing that *sticks* in the memory. That is the reason why the Army bill goes through each time as a matter of course, while this other Army bill, this Dye bill, goes through nothing but a series of circular evolutions. No one needs to be told that if you drop a gas bomb on an invader's army you are going to make him believe there are softer "marks" than the United States, nor that if you drop an explosive bomb you are going to make a pessimist of him then and there. But seemingly it requires a greater mental capacity than most of our Solons possess to grasp the fact that without the dye industry there will be no bombs here of the 1930 pattern.

The title of this article was not chosen merely to provide black types for a heading. It was selected with some care, and we honestly believe that if you will say it once or twice it may help you to remember. "Dyes for Defense." Get that? It means something. There is a real relationship. We know you will never have any trouble in associating Aircraft with Attack, Aggression and Annihilation. But think of the other. Take also Dyes with Detonation, Destruction, Devastation, if you like. Not pleasant ideas, we'll admit; but it was you who brought up the subject of airplanes, we believe.

If you and your colleagues can reach a point where you associate Dyes and Defense as readily and as naturally as you now seem to associate Dyes and Delay, you may then assure yourselves that you have almost caught up with the rest of the world, and are again living in your own age instead of remaining stuck fast somewhere back in the early eighties.

The Uniform Color & Chemical Company, Jersey City, N. J., has been incorporated to manufacture and deal in dyestuffs, intermediates, chemicals.

ITALIAN GOVERNMENT ASSUMES CONTROL OF DYE INDUSTRY

American Colors Liked—List of Dyes Used in Italy—One-third of Demand Met Locally—Prices Are Lower

By RAFFAELE SANSONE

Genoa, January 31.

Through a Royal decree an agreement has been arranged between the Italian Minister of Industry and Commerce and the Association of Producers and Consumers of Artificial Coloring Matters (Consorzio fra Produttori e Consumatori di Materie Coloranti), for the sale of all dyestuffs coming from Germany. Through this agreement the said Association was placed in the right of receiving a first lot of 700 tons of the coloring matters and intermediate products delivered by Germany on account of War Reparation, at the condition of opening a bank credit of 9,000,000 lire and paying to the Italian Treasury, within five days from the delivery of the goods, 1,000,000 lire. The above lot is to be followed by others arranged through successive contracts.

The prices and conditions of sale are fixed by a technical committee, named by the Italian Ministry, and the first are contained in a special list, kept at the disposal of interested parties at the Milan Chamber of Commerce. The money obtained through the sale of the dyes and intermediates is to be paid to the Italian Treasury, after deducting a commission of 4 per cent, which is intended to cover all expenses and profits of the Association of Producers and Consumers of Artificial Coloring Matters. The Italian State, through the above Association, thus monopolizes the commerce and industry of dyestuffs in Italy, to the great damage of such exporting countries as the United States, England and France, the value of the products of which was being more and more appreciated.

However, the present gratuitous deliveries from Germany cannot last forever, and a time will come when the War Indemnity has been satisfied in

full, a similar monopoly is only temporary, and it is at present well worth while to conduct a certain amount of preparatory work for guaranteeing a strong return of business in the near future. For such reasons coloring matter producers should prepare their way at present for the near future by keeping their names continually before the notice of the Italian purchasing public through a systematic sending of pattern cards, small samples and circulars such as used to be conducted by the German system before the war, and which assisted in placing this country first in the delivery of artificial coloring matters. Besides this, a certain amount of business is always still possible in those dyestuffs which cannot yet be supplied by Germany, or are supplied in too small quantities for satisfying all demands.

NATURE OF COLORING MATTERS USED IN ITALY

Owing to its great proximity to Germany and France, and to its numerous dye works and print works for the coloring of the different materials, Italy is accustomed to use every class of coal tar and natural coloring matters, and is usually well informed on all novelties, specialties, etc. The colors most used are the direct, or substantive; the basic, the sulphur, the ice, the vat, the alizarine and the acid colors. Among the most needed at present, however, are the direct, basic and acid colors, together with synthetic indigo, principally for wool, cotton, silk, paper and leather, hemp and linen being little dyed. This without calculating the requirements in logwood, quercitron bark, Persian berries, redwoods, cochineal, natural indigo and mineral colors that are still very great.

(Continued on page 12.)

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A. P. HOWES, President
 LAURANCE T. CLARK, Editor

SANSONE AS ITALIAN CORRESPONDENT

Elsewhere in this issue of The REPORTER will be found a letter on dyestuff conditions in Italy written from Genoa under date of January 31 by Raffaele Sansone. The REPORTER is gratified to announce that arrangements have been made whereby we shall receive a similar letter each month.

Mr. Sansone is an authority on dyestuff matters, having spent his life in the profession and being the eldest son of Antonio Sansone, who is well known as the author of an internationally read work on Calico Printing, published some twenty-five years ago.

Mr. Sansone will also contribute from time to time articles on the use and application of dyestuffs which will appear in the Monthly Technical Supplements of The REPORTER.

ON HEADACHES

We are entering upon the twenty-second month of the Dye bill's sojourn in the Congress of this country, and by the time this issue is in the hands of its readers the present body will have passed into history to make way for the Sixty-seventh. At the present writing it looks as though nothing short of a miracle could get the measure through before Inauguration Day, and should the miracle be wanting—this not being the Age for such things—the Sixty-sixth Congress, more particularly the Upper House, can either point to or try to cover up as disgraceful a piece of negligence as ever

marred the record of a supposedly representative government. That this Congress was a war Congress, taken up with problems connected with the war and its after-effects, will be the very worst of excuses in case the Senate fails to act. Rather will it be an added blot that it must be said: Here was a war Congress failing to heed one of the most striking lessons of the war, neglecting to act upon a true war measure.

No, the only possible excuse, which would be in no way acceptable, might be that the Senate in its supreme innocence, its surpassing puerility, had failed to realize the significance of the measure with which it aimlessly toyed. And with some 700-odd pages of testimony on the subject still lying ready to hand, such ignorance cannot seem otherwise than a little too dense to be natural.

Senator Thomas will not be back. Senator Moses will. President-elect Harding is said to favor dyestuffs legislation, although what he specifically has in mind there is no way of ascertaining right now. Representative Nicholas Longworth, who fathered the bill, has announced his intention of promptly re-introducing it, should it go over. Should he be obliged to do this, he will probably see to it that it is incorporated in the general tariff program being planned as a little curtain-raiser for the incoming administration. It is said that he has gained in influence and that he is to have charge of the chemical schedule of the new tariff, and these facts recently prompted the correspondent of a contemporary to write that the Dye bill, by virtue of them, will probably be in a better strategic position than it was last session.

Ah, well, if the Dye bill was in any kind of a strategic position during the session about to end, we here and now express an earnest hope that it will not be in a strategic position in the next. From where we sat during the carnage it appeared to be alternately in about the same kind of

strategic positions occupied by a rat being shaken in the jaws of a cat, and by Eugene V. Debs. It must have learned all the sensations of a cocktail in the days when such things existed. The last man in the box-office line of a Broadway attraction had rosy chances of receiving attention by comparison.

But why comparisons—now? Why anything at all—until next week, when we know what has happened? There is nothing to be said or done so far as the present Congress is concerned; and if it fails, our hopes must be all for the future.

Speculations of this sort lead to headaches—headaches of the variety, no doubt, from which the Senate Finance Committee, with elephantine humor, affected to suffer when the names of intermediates were being read from the Dye bill. But the committee should have read Carter on Licensing if it wanted to know the meaning of a *real* headache.

The annual meeting of the By-Products Coke Corporation, Syracuse, N. Y., was held February 23, and while it has been rumored that this company is to be taken into the merger of the five companies in the Allied Chemical & Dye Corporation, no statement on this matter was made by the company.

The Premier Dyestuff Company, Brooklyn, N. Y., has been incorporated with a capital of \$30,000.

The American consul in Sofia, Bulgaria, reports that a concern of that city offers for sale 45,000 kilos of dried cocoons of excellent quality, white, Bagdad variety. This concern guarantees that 3.75 kilos of cocoons will produce 1 kilo of silk. Financial references are given. The name and address, financial references, and other particulars of this opportunity can be obtained at the Bureau of Foreign and Domestic Commerce by referring to file No. NE-34.

THE ITALIAN DYE SITUATION

(Continued from page 9.)

ITALIAN MANUFACTURE OF DYES AND INTERMEDIATES

The manufacture of dyes was tried in Italy on different occasions, and it has been possible to establish on a fair scale the manufacture of a certain number of colors and intermediates, such as direct colors for wool, sulphur colors, aniline oil and other intermediate, natural coloring matter extracts, chrome yellow, chrome green, some printers' lakes, etc., etc. The total production of the Italian works, however, is only sufficient to satisfy one-third of the total needs of the country when its industries are working in full, and which consume, in accordance with the official statistics, an average of 612 tons of aniline oil, 5,655 tons of dry coal tar colors, 782 tons of coal tar pastes and 611 tons of synthetic indigo per year. In reality, through the German supply of intermediates arranged through the Versailles Treaty, the above one-third can, however, be surpassed at present by the Italian aniline color and aniline oil industry, owing to the greater restrictions imposed in the consumption of dyed textiles in comparison with the times preceding the war, and owing to the recognizable extension in the consumption of natural colors, and especially of logwood, that can perhaps even maintain itself for some time to come.

The Italian coloring matter industry, however, has unfortunately one weak point, and this is that it cannot so far produce other most needed colors such as acid colors, basic colors and vat colors. For the manufacture of the same the raw materials are already to be found on the spot in good quantities (naphthalene, benzene, coal tar, etc.). What is necessary, however, besides money and chemists, is the required knowledge for the manufacture of the organic bases and acids from which the majority of coal tar colors are produced, and that is exceedingly difficult to obtain owing to the extremely wide

range of the same, the secrecy with which their manufacture has been conducted, and the impossibility of finding a chemist who knows more than one branch of the manufacture of the same. Many chemists do well in color works where they have a given acid or a given base at their disposal, and which is purchased out of the works, or produced in another compartment of the same where they cannot enter, but they are not always able, however clever they may be, to manufacture all the products they use for producing their colors. The writer has often heard of examples of this, especially when German chemists were engaged by foreign color works, and were unable to produce the same dyes they had been manufacturing for decades in their own country owing to the lack of certain substances and products with the use of which they were acquainted and of the manufacture of which they could know nothing.

This does not mean, however, that artificial dyes cannot be produced to advantage even in Italy on a much larger scale than at present, and many Italian chemists are working with this end in view. There are examples of works all over the industrial world carrying out the manufacture of some colors that have never seen Germany. Many of these works cannot, however, produce certain classes of colors, especially if these require substances that are not obtainable on the market, or the manufacture of which has been only known so far to a few who are probably dead by this time.

COLORING MATTER QUOTATIONS

The prices of coloring matters, through the monopoly mentioned above, have been gradually lowered, reaching figures that would have been impossible if the purchasing and selling methods adopted during the war had been continued, when the American, English and French products were handled like ordinary chemicals, and before reaching the consumer passed through very many hands, being often doubled

trebled and quadrupled in price when they were not submitted to unfair diluting operations. Some of the current quotations per kilo on the Italian market were as follows at the end of January: Direct Black, 60 lire per kilo; Direct Sky Blue, 180 lire; Direct Marine Blue, 60 lire; Benzo Purpurine 4B, 120 lire; Chrysophenine G, 180 lire; Nigrosine in crystals, 35 lire. The mineral and natural colors also received a marked reduction, some quotations being as follows: Italian Minium, 3.60 lire per kilo; English Minium, 4 lire; Lithophone, 3.50 lire; Litharge, 4.75 lire; Zinc White, 5 lire; White Lead, 5.50 lire; Ultramarine Blue, 8.50 lire.

TO SHOW ROLE OF AMERICAN DYES IN MODERN STAGECRAFT

Exhibits of more than passing interest to many elements of the dye and textile industries will be shown at the annual ball and entertainment to be held Wednesday, March 9, at the Waldorf-Astoria, New York, under the auspices of the United Scenic Artists Local No. 829, whose headquarters are at 161 West Forty-sixth Street. The trade needs little reminder of the increasing use, during the past two or three years, of dyed fabrics for backdrops and other parts of stage scenery in place of the painted canvas which once universally obtained. Many producers of note are coming to realize their advantages, not alone because of their greater beauty and superiority in securing certain effects, but because of the economy with which they can be transported, since they can be rolled up

compactly and do not require specially constructed trucks as do the unwieldy canvasses mounted on frames.

According to Walter S. Darrell, business representative of the scenic artists, the exhibits at the ball will bring forward examples of the "dye-drops," as they are called, used in some of the big legitimate productions, showing what may be accomplished by the use of American dyes. Batiks made by leading studios will also be shown.

"DYEING WOOL AND COTTON GOODS"

In the February 14 issue of The REPORTER appeared an article under the above title by Joseph Loeb, and through an error it was labeled "To be concluded." To those who read the article we would say, with Ethel Barrymore: "That's all there is; there isn't any more," and that the line which should have terminated this article was one crediting it to the *National Cleaner & Dyer*.—Ed.

LUSTER ON COTTON PIECE GOODS

Methods of producing a lustrous appearance on cotton goods have been in use for a considerable time. They are of a chemical or purely mechanical order, and in instances the methods relies on both. The chemical methods of lustering cotton goods may be divided into two main categories, the one covering those which certain conditions modify the cellulose of the fiber, and the other those by which the fiber is directly coated more or less with a film of a substance with a high refraction

index by the treatment of the cloth itself.

Mercerization represents the type of processes causing a modification of the cellulose and though it is still a very popular method, the degree of luster it imparts is regarded as not quite satisfactory for some classes of goods. Many methods have been invented for transforming the superficial cellulose of the fabric into nitro cellulose or acetyl-cellulose. In the American patent 954,310, the transformation into acetyl-cellulose is obtained by the aid of a mixture of anhydrous acetic acid and sulphuric acid. This treatment is claimed to make the fabric waterproof as well as lustrous.

Another process consists in making a solution of silk waste in alkali or ammonium cuprate, and applying this to the cotton and then fixing the silk by a mineral acid or a bicarbonate. An acid solution of gelatine and formaldehyde has also been applied to the cotton by means of cylinders, and the gelatine subsequently coagulated by ammonia vapor. It has also been proposed to sprinkle the cotton fabric with a solution of nitro-cellulosein, a mixture of ether and alcohol, so as to form a fine covering of collodion. The film so produced on the surface of the cloth is opalescent because of the presence of water, but it is plainly visible. With the idea of avoiding the presence of the water, it has been suggested not to dissolve the nitro-cellulose in alcohol and ether, but in the acetate or the formate of amyl, which gives solutions containing 1 to 2 per cent of nitro-cellulose

and may be colored with soluble dyestuffs.

Of the methods of a mechanical order, the oldest are pressing and calendering. The first application of engraved cylinders was on taffetas, the resulting finish being for a long time known as the Schreiner finish. Various and numerous modifications of this method have been made. Depierre employed in Alsace a method of calendering the pieces in the moist condition with calenders so heated as to convert the moisture into steam, and in that way produced a degree of luster capable of improvement by further mechanical treatment. A means proposed for making the luster obtained in cotton fabrics resistant to water consists in passing the fabric under tension between hot cylinders. It has been asserted that to fix the luster requires a rapid passage of the fabric at a temperature as high as 400 deg. Cent.—*Canadian Textile Journal*.

AMERICANS HAVE CHANCE TO COMPETE WITH JAPANESE IN MANCHURIA

Among the various kinds of cotton piece goods imported into Manchuria from abroad, a cloth known to the trade as "Japanese cotton cloth" is by far in the greatest demand. This kind of cloth is used exclusively by the agricultural and laboring classes, owing to its extreme cheapness and durability. About 75 per cent of the entire population of Manchuria—which is estimated at 18,000,000—is directly or indirectly engaged in agricultural work, and this fact shows clearly the tremendous demand existing for such cloth.

The customs returns show that the importation of Japanese cotton cloths into China in 1913 was 13,312,650 yards valued at \$669,644, and in 1919 was 98,537,082 yards valued at \$12,313,910. Of these quantities the amount sold in Manchuria in 1913 was 10,865,847 yards valued at \$567,438, and 97,562,899 yards valued at \$12,211,592 in 1919.

Jackets and trousers are made from the natural-colored cloth. Wadded winter garments are made of blue cloth. The uppers of the cheap Chinese shoes so popular among the laboring classes are made of this cloth after being dyed black. Dyed red, the cloth is used for wedding decorations and for the making of children's clothing, while a light gray shade is used for mourning garments. Apart from using the cloth for shoes, the laboring and agricultural classes use very little black cloth for any purpose, the blue shades being by far the most popular. In the natural color it is used in great quantities for a variety of purposes, such as lining for garments, bed quilts, shoes, and hats. The cloth is also used for mourning turbans, sashes, and gowns, worn during the period of mourning immediately following the death of a relative.

Every year a number of new chops appear on the markets. The most popular ones, both new and old, are:

	Per Bolt
Crown on Elephant	\$2.90
Lucky Time	2.50
Te Shou Tu (a historical picture)	2.50
Golden Character	2.90
Heaven No. 1	2.90
Heaven No. 2	2.50
Three Boys	2.50
Happiness	2.40
Benefit	2.55

Among these chops, the "Crown on Elephant," "Lucky Time," "Te Shou Tu," and "Golden Character" are the best sellers. All Japanese cotton cloth comes in uniform dimensions of 18 inches by 22 yards. It is difficult to give the mills of origin, as the manufacturers' names do not appear.

This cloth is all imported in the natural color and dyed locally. In terms of small coin (at present exchange \$1 small coin equals about 45 cents United States currency) the cost for dyeing is:

	Per Bolt
Medium blue	\$1.20
Light blue	1.10
Black	1.00
Red	6.00
Gray	0.40

Japanese cotton cloth is packed in bales covered with straw matting and strapped with six iron bands. Each bale contains sixty bolts.

The cloth in natural color is in demand throughout the entire year and is dyed as the demand requires. As Manchuria has an exceedingly long winter, the demand for cotton piece goods is larger during that period than any other season.

The Japanese manufacturers place their goods with local Japanese importers who have extensive connections with interior points throughout Manchuria, the former granting the latter three months' credit, while the importers allow the Chinese dealers one month's credit, with the privilege of one month's extension and 3 per cent discount for cash. The Japanese manufacturers make it a practice to allow an importer who can guarantee the sale of a certain amount of cloth annually an individual chop, which can be used by no other importer. This method prevents a rival importer from encroaching on the trade of an importer who has the right to a particular chop, once the trade is familiar with it.

Should American manufacturers be able to produce a cotton cloth at prices competing with the Japanese, they

could most probably obtain a share in this lucrative trade. To participate in the trade, nevertheless, it is essential to keep a local agent in Manchuria, who should at all times be kept well supplied with stocks in order that immediate deliveries could be made. Japanese sales methods as outlined in the foregoing and credit system extended would have to be followed.

NOTES ON DYEING UNION MATERIAL

(In a previous article the writer gave a general outline of the principles of garment dyeing. In this article he goes into the matter in more detail and describes the different methods to be followed to apply the different dyestuffs on different materials.)

The materials of which the garments of to-day are made are, as a rule inferior both in quality and color to the materials used a few years ago. In many cases these garments are more faded than were the garments that were received a few years ago. By this I do not mean to insinuate that the dyestuffs of to-day are inferior to the pre-war dyes. The dyes being made in this country at this time are the equal in every respect to the German colors. It is true, that some colors have not, as yet, been made here but the dyes that are used most extensively in the garment dyeing industry are available, and are as good in every way as dyes, formerly obtained from abroad. The

problem consists in applying them in the proper manner to secure satisfactory results.

The materials that find their way most frequently to the cleaning and dyeing plant to be dyed are union goods—fabrics made up from more than one fiber. The combination might be composed of cotton and wool, cotton and silk or wool and silk. The last combination is the most difficult to dye satisfactorily. It is a very simple matter to color wool or silk separately with a direct or an acid dye, but to color the two fibers to the same shade at the same time and produce an even and a solid color is a somewhat difficult problem and requires considerable skill.

WOOL AND SILK

Of the various colors I have used I find that the direct colors are the most suitable for this kind of work. They color the wool and the silk much even, in most cases, than the acid dyes do. It is best to dye combinations of wool and silk in a neutral bath with the addition of Glauber's salt. Most of the direct dyes have an affinity for the silk at a low temperature. The dyeing process should be started at a fairly low temperature and the temperature of the bath raised slowly to the boiling point. The material is then boiled until the wool is the same shade as the silk. This usually requires from fifteen to forty-five minutes according to the depths of shade required and the affinity of the

dyestuff being used for the different fibers. The goods are allowed to remain in the cooling bath for from fifteen to thirty minutes and are then removed and rinsed.

When the direct colors do not possess the required brightness neutral dyeing wool colors may be used in conjunction with the direct colors to produce the shade required. The reason I have commented on this particular material (silk and wool mixed goods) is that many of the textile mills are making it and it will not be long until considerable quantities of it will be finding its way to the plant to be dyed.

WOOL AND ARTIFICIAL SILK

At first glance a garment will sometimes appear to be a mixture of wool and silk, when in reality it is composed of wool and artificial silk. If direct colors have been used to produce the shade desired it does not make any difference whether the fabric is made of wool and real silk or wool and artificial silk, as the direct colors will, in most cases, color both of these materials equally well. However, if acid colors are used it will be found that the wool is colored while the artificial silk remains uncolored.

There are certain colors that will dye wool and leave both silk and artificial silk unstained, but as a general rule acid colors dye real silk and leave the artificial silk unstained or slightly tinted. Silvertones, tinseltones, and various other dress goods on the market to-day, are composed of wool and artificial silk and when dyed with acid colors produce two-tone effects. When these goods are received to be dyed there are two methods of dyeing that can be followed: (1) Dyeing with an acid dye to produce a different color and at the same time not destroy the two-tone effect, or (2) dyeing with a direct or a union color and thus color the fabric to a uniform shade. If the ground color of the material is a fairly dark shade and the artificial is colorless or only slightly tinted more or less

of a contrast is bound to appear even when dyeing with direct or union dyes but, as a rule, it is only a slight shade of difference and usually satisfies a customer, as the contrast is always a pleasing one.

THE MATTER OF TEMPERATURES

When acid colors are used for dyeing wool and silk garments to produce solid shades, great care must be taken to choose the proper dyes to do this work and then if the proper dyes are used it is a matter of watching closely the temperature of the dyebath. The silk, as a rule, absorbs color at a lower temperature than the wool and, therefore, is the fiber that is dyed first. As the temperature increases more and more of the dye goes on the wool and more or less of the dye will boil off the silk. It is always advisable to sample at the boil, as in some cases both the wool and the silk are of the same shade, or very nearly the same shade, when the boiling point is reached. When this occurs the steam can be shut off and the goods allowed to remain in the cooling bath for from thirty to forty-five minutes.

(To be continued.)

The La-Lo Chemical Company, Providence, R. I., has been incorporated with a capital of \$200,000, to manufacture dyestuffs and chemicals. The incorporators are E. J. Tetlow, C. E. Waterman and R. M. Greenlaw, Providence.

Dye-a-Grams

"Official Officiousness" — meaning, we take it, "Presumptuous Presumptuousness."

—o—

"The survival of the fittest" may well be applied to the dyestuff industry.

—o—

(Dear E. K.: Dye-a-Grams are not caused by spontaneous combustion, as you intimate, but rather from the fact that we occasionally hit on all six cylinders.)

—o—

Some time ago a certain dye firm claimed that it was the color that sold the goods. From experience we would say this was not so!

—o—

S. R. D.—We know a lot of people who would like the enviable position of being able to elect their own officers and directors.

—o—

"Webster Will Resume Patent Law Practice." S'all right with us, as long as he doesn't start another dictionary!

—o—

"Distorting the Truth"—"*Reporter*" *Headline*. Don't you know, dear Ed., that the people you refer to are the greatest little distorters in the world?

—o—

Editorial Excerpt — "Interressengemeinschaft"!! Whaddya mean, bringing the name for a new brand of sausage up in a dyestuff editorial?

"*Reporter*" Advertisement—"For level dyeing acid colors consult The Chem. Co. of America." Take a half pint of the same company's brand of Monopole, and they'll all look level whether they are or not.

—o—

Brains, we'll say, are a necessary ingredient in the blending of compound shades.

G. E. T.

NOTES OF THE TRADE

The D-K Chemical Company, Nutley, N. J., has been incorporated with a capital of \$100,000, to manufacture chemicals and dyestuffs. The incorporators are Gustave Katzsch, Howard M. Gensel, Nutley; and Ernest Keller, Montclair, N. J.

At a recent meeting of the Master Dyers' Association of Philadelphia the feature was a moving picture exhibition of the processes in the manufacture and standardization of dyestuffs. These were the results of views taken at the dyestuff plant of E. I. du Pont de Nemours & Co., at Deepwater, N. J. This now comprises 159 major buildings and 300 less important structures, covering an area of two square miles.

The three manufacturers' representatives on the British dyestuffs advisory committee will be W. J. U. Woolcock, M. P., general manager of the Associations of British Chemical Manufacturers; E. V. Evans, South Metropolitan Gas Company, and J. Whittemore, British Dyestuffs Corporation.

C. R. DeLong, for some time a member of the chemical staff of the United States Tariff Commission, has been placed in charge of the chemical section of the Commission's force. Dr. Grinnell Jones, who held that position for some time, has been placed on a purely consulting basis. The latter has done little more than consulting work for the Commission for quite a while, being a member of the chemical faculty of Harvard.



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In 2 Sections
Section 1



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AMERICAN DYESTUFF REPORTER

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"Circulated Everywhere Dyestuffs Are Used"

In Two Sections—Section One

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No. 10

CHEMICAL DISARMAMENT

Being Extracts from the Recent Article

By V. Lefebure

THAT those engaged in considering legislation for the protection of the dye industry, whether in this country or in any other, must realize that they are legislating not on a matter of merely commercial significance, but on world peace, is one of the strong arguments against continued Senatorial indifference advanced by V. Lefebure, formerly British liaison officer with the French forces, in an intensely interesting article in a recent issue of *Chemical & Metallurgical Engineering* under the above heading. It is impossible to bring about international disarmament, he shows, while any country retains a monopoly of the dye industry, and in his logical proof that the German dye industry has been strengthened instead of weakened by the war there should be much food for thought on the part of those who have made it a practice on every possible occasion to bawl deafeningly that our dye makers have nothing to fear from that source.

Although a part of Mr. Lefebure's subject matter will be familiar to our readers, his way of presenting it provides a somewhat new "slant," so to speak, and will be perused with interest. And there is a distinctly new thought in his significant proposal that, if the worst should come to the worst, the Allies would be amply justified by the Treaty of Versailles in greatly curtailing that part of the German dye industry which produced poison gases during the war, and, under another clause of that contentious instrument, in actually seizing and closing up some of the Rhine dye works.

Here's an idea indeed! Man usually finds some way of pulling down to his own level those things which he cannot jump high enough to reach; and while the Allies and the United States are engaged in trying to attain the efficiency of the German dye-explosive-gas industry, they may possibly find it expedient to destroy a part of it in order that the world's

total chemical armament may not be too strongly centered. The only trouble is that unless Congress manifests greater concern for its duties than it has in the past two years, this country may be the only one acutely desiring such limitation of Rhine valley activities, since the others have wisely protected themselves in the matter of chemical armament.

The legal authority of the Allies to make such a demand, the writer declares, depends upon the proper interpretation of the term. This should not be difficult in any country save this. However, we will let Mr. Lefebure continue the discussion in his own words:

"The League of Nations has instituted a definite commission to consider the question of world disarmament. A brief analysis reveals the fact that disarmament must cover three essential factors in warfare—the combatants, mechanical types of armament, and war-chemicals.

"Chemical armament, very generally, represents the actual death-dealing constituents of projectiles. This must, however, be qualified by the statement that the new type of chemical armament has become in some cases, and may increasingly become, independent of any special projectile. This is a most important item from the point of view of disarmament. It means that the limitation of projectiles may not carry with it limitation of the chemical weapon.

"How do normal disarmament schemes apply to the chemical type? This type of weapon covers, roughly, two classes—explosives and the so-called poison gases. They have one common characteristic. This is their peace-time use. This refuses to any disarmament scheme the right to disarm in the simplest fashion—that is, by the total destruction of producing capacity. The world must have for normal development a large producing capacity for explosives and for the other types of chemical armament. Germany produced practically every ounce of her hundreds of thou-

sands of tons of poison gas in dye plants. The infinitely flexible, almost instantaneously converted dye plants are a logical means of production of all organic chemical weapons, including explosives.

"We must now stop to lay emphasis on a general principle. There are two methods of disarmament. In the first class you can disarm very simply by destroying all the means of production and preventing their renewed growth. In the second class, because the means of production—the factories—have a peace-time function, you cannot disarm by destruction. How, then, can you disarm in this case?

"There is only one way—it is to insure that no one country possesses a monopoly in the means of production. The brightest and most telling war-chemical invention has no value for and no incidence upon warfare unless it can be produced rapidly and in quantity. Production is the key to its war use. Let us examine very briefly, therefore, the world distribution of the means of production for this new type of weapon. Before the war Germany held the almost absolute monopoly of world organic chemical production. Through this monopoly she launched the poison-gas campaign, and for more than two years the Allied reply was relatively feeble. This was not due to Allied lack of invention, but to lack of producing capacity.

"During the war, however, for economic rather than military reasons, dye-producing industries sprang up in France, America and England. Their development was relatively feeble, owing to numerous obvious reasons. From the point of view of our argument this development left the world in the following situation regarding organic chemical-producing capacity:

"The German dye industry, the source of her war-chemical production, was considerably strengthened. Other countries were left with promising but relatively feeble organic

chemical resources which could not immediately, even under normal commercial conditions, hope to break the German monopoly. In other words, although for most types of armament the pre-war balance in favor of Germany was decreased, yet for this one type of chemical armament the German monopoly was strengthened."

We are, therefore, declares Mr. LeFebure, left in face of the following situation: For most types of armament the war has led to a redistribution of producing capacity in the direction of an equilibrium. By diminishing this capacity and controlling and inspecting we may obtain international disarmament; but in chemical warfare, the final situation is just as remote from equilibrium as before. The conclusion is obvious. The world must have organic chemical-producing capacity, but it cannot tolerate a monopoly held by those who so drastically abused its possession.

There must be a redistribution before we can claim to have even approached disarmament. It would be farcical to proceed with general disarmament schemes and to leave this untouched. In other words, we must break the German monopoly. He continues:

"How can this be achieved? There are two main avenues of approach. The new-born dye industries of France, America and England, and, if you wish, other countries, must be supported nationally through legislation and internationally through some such organization as the League of Nations.

"In America and England legislation designed to protect the dye industry is before both countries. The issue is likely to be fought out on purely national grounds. This alone is entirely unsatisfactory. It must be realized by all concerned that they are legislating on a matter which has infinitely more than com-

mercial significance. They are legislation on world peace.

"Chemical disarmament is a matter which, unfortunately, non-technical people do not fully understand. They think it sufficient to issue an edict against the use of poison gas, not realizing that this alone is absolutely futile as an effective measure. You cannot prevent any discoveries in chemical warfare, because, unlike the development of mechanical invention, such chemical discoveries can occur, when directed by a trained mind, with the mere use of a few pots, pans, beakers, in any unguarded and unsuspected locality. The redistribution of producing capacity is therefore critical.

"Article 168 of the Treaty of Versailles provides for the restriction by the Allied and Associated Powers of the manufacture of war material and of the approval of those Powers for the continued existence of factories and works for such production in Germany. On these grounds it is logically possible to limit seriously that capacity of the German dye industry which produced poison gases during the war and may continue to do so. Article 169 provides for the surrender to the Allied and Associated Powers of any special plant intended for the manufacture of military material, except such as may be recognized as necessary for equipping the authorized strength of the German Army. The execution of this clause, if a proper interpretation of chemical armament be used, would imply the closing down of many of the German dye plants which produced those huge quantities of poison gases during the war.

"We repeat that the crux of all disarmament is the redistribution of organic chemical capacity throughout the world. This is, without any doubt, one of the most important measures now before the world, and, in addition, one of the few measures with regard to which immediate action can be taken toward the stabilization of world peace."

NOTES ON DYEING UNION MATERIAL

(Concluded from last week.)

DYESTUFFS TO USE

When the boiling point has been reached and it is found that the silk is dyed heavier than the wool the boiling must be continued in order to bring the wool to the same shade. It is a difficult matter to give a list of the dyestuffs that will produce the various shades, as most of the shades and colors most in vogue to-day are blends of several dyestuffs. For this reason I am going to mention only a few of the dyes suitable for combination work rather than to confine the discussion to any given shades.

Following are some of the acid colors suitable for this kind of work: Milling Yellow, Tartrazine, Azo Yellow, Indigotine, Patent Blue, Sulphon Cyanine, Acid Navy Blue, Fast Acid Green, Wool Green A, Ponceau Scarlet, Acid Red BP, Acid Crimson GA, Acid Orange, Orange 4, Acid Violet 6B, Acid Violet 4BC, Acid Violet 10B.

THE DYEING PROCESS

The acid dyes are very often used for this kind of work and are, as a rule, as fast as the acid colors and, in many cases, faster. Union colors are also used to a considerable extent, but as these are composed mostly of direct colors, with enough neutral dyeing wool color to produce a solid shade, they can be considered in the same class as the direct dyes. When union or direct dyes are used to dye wool and silk goods the dyeing is carried on in the same manner as ordinary union dyeing. The process is started at a temperature ranging from 100 to 120 deg. Fahr., the temperature is raised slowly to the boil, and the boiling is continued until the wool is of the desired shade. The steam is then turned off and the material is allowed to remain in the cooling bath for from thirty to forty-five minutes. Most all of the union colors work well on this class of goods and the shades produced are much bloomier than when the goods undergoing treatment are composed of cotton and wool.

Union Blue GS, Union Seal Brown CD, Union Green B, Union Green G, Union Bordeaux OL and Union Fast Red F all possess good leveling properties and have good fastness to light.

COTTON AND ARTIFICIAL SILK

Another class of goods that is quite common to-day is a material made of cotton and artificial silk. This can be dyed with union dyes but it is not necessary to use them, as ordinary direct dyes will answer the purpose and none of the dye is wasted as in the case when union dyes are used. Union dyes, as stated before, contain more or less wool dye and as this has little or no affinity for artificial silk it is not advisable to use this class of dyestuff unless there is no direct dye on hand that will produce the required shade.

Most all of the artificial silk colors work well with the direct colors but I recently had experience with a very peculiar kind of artificial fiber. I tried acid and direct dyes on this silk but neither of them had any affinity for the fiber. I then tried dyeing the silk with basic dyes from a water solution and found that the silk had a little affinity for the dyestuff but not enough to produce a shade with any depth to it. The goods were then immersed in a solution of part water and part alcohol to which the basic dyestuff was added and the material colored very readily. The silk in this particular case was to be used for pompoms on slippers but the party for whom the work was done also informed me that the same kind of silk was to be used for fancy embroidery work as well as mufflers and other articles of wearing apparel. For this reason I deemed it advisable to mention this fact, before taking up other classes of material.

COTTON AND SILK

There is a great deal of dress material used for summer wear that is composed of cotton and real silk. Some very good results can be obtained with this class of goods. Two-color effects

that are very pleasing to the eye are easily obtained. The material can also be dyed so as to leave one or the other of the fibers uncolored. The following colors have a great affinity for cotton and leave silk unstained or slightly tinted. Direct Fast Yellow A, Direct Blue 2B, Direct Blue BR Conc., Direct Brilliant Blue G, Benzo Azurine, Direct Black BH, Direct Orange G, Direct Orange 5RE, Direct Sky Blue, and Direct Brown BX. The following neutral dyeing wool colors have a good affinity for the silk and leave the cotton unstained or only slightly tinted: Azo Yellow, Metanil Yellow, Acid Orange, Orange 2, Fast Red A, Rocelline, Azo Fuchsine 6B, Acid Violet 6B, Acid Violet 8B, Acid Green M, Wool Green A, Acid Black 10B, Acid Black NBR, and Neutral Wool Blue.

DYEING PROCESSES

Any of the dyes mentioned above should be dyed in a neutral bath with
(Continued on page 12.)

AMERICAN DYESTUFF REPORTER

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In Two Sections—Section One

Pointed solely toward the welfare and growth
of the American Dyestuff Industry. Unbiased
contributions appreciated.

A. P. HOWES, President

LAURANCE T. CLARK, Editor

SENATOR MOSES INTERPRETS

Of solemn and vital interest to the trade is the report of the War Trade Board indicating that during the fiscal year ended June 30, 1920, this country licensed and imported 9,388,296 pounds of dyestuffs from foreign sources, this total including dyes not produced here at all, dyes not produced and for which no satisfactory substitute was produced during that period, and dyes produced here but not available to the consumer on reasonable terms as to price, quality or delivery. The combined figures are imposing.

Switzerland was our heaviest contributor, sending in 3,838,121 pounds. Germany sent us 3,608,262 pounds, almost as much; England contributed 1,625,523 pounds, while from all other sources we obtained 316,390 pounds. The largest single total listed is 1,074,174 pounds of acid colors received from Switzerland during the fiscal year. We drew upon Germany for 1,021,378 pounds of vat colors, on Switzerland for 863,798 pounds and on England for 32,046 pounds of these prime necessities to the textile industries, making a total of 1,917,222 pounds of vat dyestuffs imported under license. Germany sent us 960,250 pounds of acid colors, Switzerland 765,569 pounds of direct cotton colors, and England 462,370 pounds of sulphur colors, this last item representing that country's highest total for any one class.

There were three principal reasons for the granting of licenses; two, of

course, being no production here at the time the license was granted, and insufficient production to meet domestic requirements. The third reason interests you because it arises from the failure of dye manufacturers in certain instances to report dyes being produced by them. And upon whom, we are prompted to ask, did the burden fall in cases of that kind—the manufacturer or the consumer? Surely the latter was taken care of, yet there are still some who would have it that the provisions of the Dye bill will prevent the harried consumer from getting what he wants. Incidentally, the manufacturers in question lost sales because of their lack of enterprise, while the consumers were no worse off than they would have been in any event, since—be it whispered!—failure to use even a little advertising space would have obliged the consumers to send abroad, licensing or no licensing.

A correspondent for a contemporary showed the list of imported dyes to Senator George H. Moses, one of the—but you know him! At any rate, the gentleman from New Hampshire eyed it sternly, frowned, shook his head once or twice and cleared his throat before remarking in a manner obviously intended to be highly impressive:

"If this indicates that American dye manufacturers cannot make all of these products, or enough of them at proper prices and terms, the suggested plan of embargoing imports of dyestuffs seems to fall to the ground."

Let coarse, ribald laughter resound from every side! We do not vouch for our description of the Senator's facial expressions just prior to delivering that gem of thought, but our contemporary, which happens to be the *Oil, Paint & Drug Reporter*, does vouch for the remark itself—and the rest is easy to imagine. One is reminded of the small boy on his way to Sunday-school, jingling in his hand two five-cent pieces, one for candy and the other for the collection. Suddenly a coin escaped him, struck the ground and, despite his frantic effort to retrieve it, rolled down into the sewer.

"Oh, gee!" came the exclamation in tones of genuine regret, "ain't that a darn shame; there goes the Lord's nickel!"

Knowing the Senator as intimately as you do by this time, you might easily have predicted his interpretation of the new statistics in advance. Yet can it be possible that he is unaware of the fact that by thus emphasizing the magnitude of the list of colors which the American dye industry could not furnish he is uttering one of the very strongest of all arguments in favor of the Dye bill, which will assure consumers an adequate supply of colors and at the same time permit American manufacturers to go ahead, invest more capital, and build the industry up? It would seem so.

"Suggested plan of embargoing imports of dyestuffs," he says, with fine scorn. You, Reader, recall that plan perfectly. What? Oh, yes you *do*! It originated just at the time when the Senator was organizing his company to export ice cream to the Belgian Congo!

Both ideas were eventually abandoned, but critics agreed that the Senator's scheme was a better business proposition than the other!

However, getting down to cases it becomes plain that Senator Moses means to "carry on" industriously to the best of his ability, of which ability this latest pronouncement may be taken as a fair sample. Seriously, that remark is as self-revealing an utterance as a man can make; it speaks volumes for the desperate straits in which opponents of the Dye bill find themselves for material.

Let the lesson of the War Trade Board's report sink deep into the understanding of those who think our dye industry is ready to compete, unaided or "protected" by a mere tariff, with Germany; with Germany and her broken international credit, her policy of selling at a loss on government capital until all competitors not similarly subsidized are destroyed, and her enormous advantages in the way of economical production; and let it sink deep

into the understanding of those who were misled by our own Department of Commerce's carelessly-worded and absurd statement that Germany will never again dominate United States color markets.

Only one measure will turn these ro-seate dreams into realities, and that is the Dye bill providing for the adoption of the licensing system. Japan found it so, France found it so, and after a harrowing experience England found it so. And a majority of the Senate likewise found it so, but were deterred from the performance of their plain duty by an organized handful depending for their right to hold the floor of the Senate day after day on such tommyrot as has just cluttered up the wire from Washington.

Once upon a time such abortive efforts to discredit the Dye bill were amusing, but we cannot longer afford to waste valuable days and weeks defending that which should need no defense. Now that inauguration is over, supporters of the Dye bill should make it their business to see that their rights and the rights of the nation are removed from vulgar political controversy. The War Trade Board report evidences the crying need for rapid, definite advancement on the part of our dye industry, and this cannot come while its ultimate fate at the hands of Congress remains the plaything of a few worshippers at the dismantled shrine of Kultur.

DYEING UNION MATERIAL

(Continued from page 9.)

the addition of common salt, or Glauber's salt. Very pleasing two-color effects can be produced by using one of the above colors. For example, if the dyebath is made up with Direct Fast Yellow and Acid Violet 6B and dyed in the following manner a very good combination of yellow and violet will be produced. Start the dyeing with the addition of Glauber's salt at a temperature of from 100 to 120 deg. Fahr. and raise slowly to the boil and boil for from fifteen to thirty minutes. Then

shut off the steam and allow the goods to remain in the cooling bath for from fifteen to thirty minutes, after which they should be well rinsed and finished. There is no end to the number of color combinations that can be produced and I believe that if the dyer would try a few experiments with this class of goods he would be pleasantly surprised. Also, if the customer could see some of the results produced, she would take very quickly to this novelty dyeing.

The shades produced in this manner are as fast as the ordinary run of colors and will meet all normal requirements. Very solid shades can be produced on cotton and silk goods by using direct or union colors. The following direct colors work very well on cotton and silk goods: Direct Fast Yellow SB, Direct Fast Yellow FF, Chrysophenine, Direct Fast Yellow TZ, Direct Brilliant Flavine S, Direct Blue RS, Direct Brown M, Direct Brown GX, Direct Brown TC, Direct Brown 5R, Direct Green B, Direct Green G, Direct Violet N, Direct Violet BW, Direct Fast Red F, Direct Red 4B, Direct Red 10B, Direct Garnet, Direct Bordeaux, Direct Gray B, Direct Gray, Direct Black G, Direct Black GXOO and Direct Black RS. Most any of the Union Colors work well on cotton and silk goods and if these colors are used it is very easy to shade with either a direct or a wool color as the case may be. The dyeing should always be carried out according to the union dyeing method. Start the bath at a low temperature raise slowly to a boil, boil from fifteen to thirty minutes, shut off the steam, allow the goods to remain in the cooling bath for some time, rinse and finish.

HEATHER MIXTURES

Heather mixtures have been in vogue for some time and are just as much in demand at the present time as ever. Most of the heather mixtures used in dress goods, suitings and coatings are composed of all wool and, needless to say, the effect is produced in the wool slubbing before the goods are made up. A good portion of the heather hosiery which we see on the market to-day is

composed of cotton and wool and the articles are colored after the hose have been knitted. Some very good effects are obtained by coloring the hose according to the regular one-bath method of dyeing. To produce the various two-color effects it is necessary to choose a neutral dyeing wool color for the wool and a neutral dyeing cotton color and then combine both these colors in the dye bath and carry out the dyeing as usual. The same rule that applies to heather effects on hosiery applies to union goods in general except that it is very difficult to obtain more than two colors on cloth while in the case of hosiery the stockings can be knitted with different fast color yarns with the white so that three or four different shades will appear on the finished hose while in reality only two distinct shades are produced. I have seen some very pretty two-color effects produced on union goods such as ladies' dress goods and suitings and I think that if the customer sometimes knew what novelties could be produced that the dye-house proprietor could build up considerable business along the different novelty lines—*National Cleaner & Dyer*.

According to Consul Caldwell, foreigners residing in Japan frequently purchase American silk socks and stockings, as they are cheaper and of better quality than the Japanese-made article. There is but one firm manufacturing silk hosiery in Kobe, the centers of silk manufacture being in Yokohama and Tokyo.

A. C. S. PROTESTS "GASSING" OF CHEMICAL WARFARE SERVICE

Vigorous protest against the reduction of the appropriation for the Chemical Warfare Service has been made by the American Chemical Society's Committee on National Policies.

Voting by telegraph, the committee has unanimously approved the following resolution, which was at once forwarded to members of the Senate and House of Representatives. The resolution was as follows:

"While in complete accord with the spirit prompting the restrictions of appropriations by the present Congress, nevertheless the American Chemical Society's Committee on National Policies would urge upon the Congress more favorable provision for the Chemical Warfare Service than is contemplated by the amount set by the House of Representatives—\$1,500,000.

"The carefully prepared estimates of the officers of that service, slightly less than \$4,500,000, represents less than one and a half per cent of the total appropriation for the army carried in the House bill. This amount is to care for the valuable property of the Government at Edgewood Arsenal, to enable the continuation of research on new lines of defense and offense, and to provide for the training of special troops and for the instruction of the entire army in all features of gas warfare.

"In view of the tremendous increase in the use of gases during the last year

of the war, and of the fact that approximately 30 per cent of the casualties of our army in the war were due to gas wounds, we feel that the proposed reduction to one-third of the appropriation asked would so seriously cripple the development of the Chemical Warfare Service as to constitute a matter of grave national concern.

"We therefore urge that the Congress appropriate the original amount asked for the Service in the estimates submitted."

The American Chemical Society is composed of 15,500 members and has sixty sections throughout the country. Many of its members belong to the Chemical Warfare Service, either in the laboratory or in the field, and the Society has since the inception of the service been closely identified with it.

Commenting upon the resolution, Dr. Edgar F. Smith, president of the society and former provost of the University of Pennsylvania, has said:

"The Chemical Warfare Service will be effectively gassed by the proposed cut in the appropriations carried in the House bill.

"This Congress recognized the potentialities of chemistry in future warfare by creating this Service as a distinct unit of our army. Its efficient development necessitates extensive and prolonged research on problems of both defense and offense; a most valuable property, Edgewood Arsenal, is to be conserved and kept ready for immediate utilization and expansion if need arises; the army is to be instructed in gas warfare.

"Curtailement of these lines by the largely reduced appropriation proposed by the House of Representatives will surely cause delay which will require years to overcome and may mean future disaster."

Dr. Charles H. Herty, past president of the society and editor of the *Journal of Industrial & Engineering Chemistry*, on returning from an inspection of the Edgewood Arsenal, the headquarters of the Chemical Warfare Service, said that the great plant is being kept in first class condition and that re-

search is in active progress, though the staff is still far too limited, considering the all-important character of the problems being attacked. He declared that both in preparedness for war and as a means of co-operating with the industries of peace the Chemical Warfare Service should be made to function on an efficient basis. The reduced appropriation, in his opinion, is totally inadequate for that purpose.

COLOR IN HOSIERY

Presiding at the Nottingham University College at a lecture by William Davis, M.A., on hosiery manufacture, the Hon. G. Hope Morley, of the firm of I. and R. Morley, Ltd., dealt with the subject of the dyeing industry. England, before the war, made less than 1,000 tons of pure dye. If one added to that the quantity of dyes made here from products imported, the total rose to 4,000 tons. To-day there was the nucleus of a magnificent industry, and England could produce something between twenty-five and thirty thousand tons, into which British capital and brains had been put. Prior to the war, the British capital in the industry was about £500,000; now it was £12,500,000. Surely a trade the importance of which could not be estimated was not going to be allowed to slip from our fingers. We must have legislation of some kind to protect the industry. There was one other factor that could very well be remedied. It seemed that the patents wanted revision. There were brains in England, but patents, where there were valuable inventions, were difficult, complicated, and expensive.

Mr. Davis said that the subject of color did not receive the attention of hosiery manufacturers commensurate with its importance as a vital factor in trade. Articles intended for underwear in particular were often uninteresting in their color effect, especially natural colored underwear, where the prevailing shades were dull and flat in appearance. In his opinion an effort should be made to brighten up many of those dull grays and fawns, where the

addition of a small percentage of bright primary hues blended in the wool would impart a touch of bloom to the article. The manufacturer should make a close study of the effect of color on the mind. For winter wear browns and reds, having a right, warm, and cozy effect, should be employed, whilst for summer wear cool shades of blue and green should predominate in the texture. Many were slow to appreciate the commercial advantages of being *au courant* with the prevailing shades of the new season. In some cases brown or gray would be the dominating factors, whilst in others lovat blends would prevail.

The colorist who catered for the export trade had to make a close study of the color taste of other countries. In design the French had distinctly floral tendencies, the Teutons were known for their love of strong and highly colored contrasts, whilst the markets of South America and the colonies had tastes peculiarly their own. To cater for those markets the colorist should spend some time in the different countries making a close study of their color predilections. In examining the goods displayed in many of our stores one could note numerous glaring defects in color taste, and one of the most common was lack of range and variety. Those responsible for the work did not make the most of the colors placed at their disposal, many permutations and possible combinations being entirely overlooked, owing to the haphazard manner in which the work was done. Strong vivid colors were found blended with mild tints, and there was often an entire lack of balance of the various color elements in the pattern. Little skill was shown in using colors, which, though not in themselves complementary, could be vastly improved by a judicious intermingling of black and white. In the clan tartan the most vivid and striking primary and secondary colors were successfully employed on a system of guarding the bright colors from impinging on each other by touches of black and white, whilst the large color diamonds were devised on a system which produced a harmonious whole.

In conclusion, the lecturer dealt with the problem of color blindness, and claimed that before entering on a career in which design and color were involved, the individual should have his vision tested for the defect. The color faculty usually developed during the teens, and the chief factors in the development were constant practice in handling and blending colors. The theory of color could do much to assist in educating the color taste, but much depended on the inherent taste of the individual.

THE USE OF GLUE IN WOOL DYEING

Better results are obtained in the scouring of wool where old baths are used rather than fresh ones, and attention is also drawn to the fact that a better penetration of color and a more uniform dyeing are obtained when wool is dyed in standing baths rather than in freshly prepared dye liquors. In order to explain these results, it has been suggested in the case of wool scouring that the potassium salts removed from the wool form a sort of soap with the grease also removed from the fibers, and thereby increasing the scouring efficiency of the bath. But under the conditions of scouring it is unlikely that any appreciable degree of saponification of this character takes place in the scouring liquors. Also the increased efficiency of standing dye baths has been explained by an increase in the concentration of the

sodium sulphate or other salts used as assistants, which accumulate in the successive dye baths, but experiments conducted in order to test out this theory have shown that it is not a proper explanation.

Rinoldi considers that a more reasonable explanation of the various phenomena observed in connection with old baths in scouring and dyeing wool is to be found in a consideration of the material of the fiber itself, which, as it is well known, partakes of the nature of an albuminoid substance. It has been previously shown that wool is partially soluble in boiling water and, furthermore, shows a distinct loss of weight during dyeing, and consequently it has been suggested that the better results observed in the use of old dye baths and liquors are to be attributed entirely to the presence of a certain quantity of albuminoid substance in the dye bath originating from partial solution of the fibers.

There are also other facts which tend to confirm the presence of gummy substances in the dye liquor. For example, it was observed that wool could not be dyed as well by synthetic as by natural indigo when dyed under conditions suitable for the latter, and some of the indigo manufacturers recommend the addition of a solution of gum or glue in the preparation of the synthetic indigo vat for the dyeing of wool. Furthermore, in garment dyeing, previous to the dyeing of the material it was formerly cleaned by means of a treatment with soap and soda, a process which is liable to result in the shrinking of the woollen goods.

At the present time it is recommended that the garments be steeped in a warm solution of 4 to 5 per cent of glue without any other addition for a period of 24 hours, after which the grease, dirt and blue are removed by working well in water.

Rinoldi also puts forward the idea that the felting of wool is not only due to the interlocking of the external scales of the fibers but is also the

result of the cementing together of the surfaces of the fibers, due to the fact that the wool fibers swell and become soft when treated with alkaline or acid solutions at high temperatures, then when tightly compressed they tend to adhere firmly together, the substance of the wool fibers becoming the adhesive substance.

By experiments on the cleansing of raw wool it was found that by the use of glue in the bath the wool loses less in weight and yields a softer and superior fiber than when soda is used. The baths are prepared with 1 to 2 parts of soap for every 2 to 3 parts of glue. It was also found from experiments in the dyeing of wool with various acid and mordant colors that the addition of glue to the dye bath acted as an equalizer and also assisted in the penetration of the color to a greater extent than Glauber's salt.

—*Color Trade Journal*

FUNCTIONS OF THE DYE CHEMIST

An Extract from the Address of B. Leech

Most dye works of importance now employ a chemist, but there is still room for very considerable progress in the direction of scientific organization and control of the processes carried on. On the one hand there is a deficiency in the supply of adequately trained men, and on the other there is a failure to appreciate the value of scientific control. The dyehouse chemist is to-day employed chiefly for the analysis and evaluation of materials as a guide to the buying department, but it is desirable that he should have a far greater share in management and responsibility, and that remuneration should be offered which would attract men who are fit to take such responsibility and have a place on the board of directors. It is not generally realized that a manager who possesses no scientific training cannot employ a trained man un-

der him in such a way as to get the greatest benefit from his services. Such a manager fails to see the opportunities for the application of scientific method which are actually under his eyes, and the problems which he passes on to the trained man are most frequently presented in a form which precludes any likelihood of the latter drawing up a report of real value. Given the trained man, the only way in which to bring him into contact with his work is to give him complete technical control and a free hand. It is often far easier to solve a technical problem than to explain it to a board of untrained directors and teach them to arrange the facts and draw the inferences in a scientific manner. However, the supply of men capable of taking responsibility is very restricted, and a much broader scientific education is needed in the technical school. When Nature presents a technical problem she has no regard for the examination syllabus. A problem which at the first glance appears to be a chemical one often involves a knowledge of physics or biology for its solution. The first requirement for the dye-works chemist is a broad and thorough training in scientific method. In addition to chemistry he requires at least a sound knowledge of physics and mathematics, and he must be familiar with the technique of the microscope. The best training for such a man is a broad scientific course at a university, followed by special training in a technical school. At present the university-trained man knows too little of the technical side, and the technical college man knows too little of the scientific side. . . .

Advice of the trained man will be needed as to the plan and construction of buildings, the materials of the walls, roof, floor and drains, for wise decision on these points involves a knowledge of the processes for which the building is to be used. Ventilation (which is generally either very bad or immensely expensive), steam and power equipment, and the arrangements for artificial lighting also demand his attention.

Further, there is the important question of plant. The modern tendency is to dye all textile materials at as late a stage of manufacture as possible. If goods can be woven "in the gray" and dyed in the piece the output of a given number of looms is far greater, and there is much less risk of damage than if they are woven from dyed yarns. But piece-dyeing involves a great variety of machinery, and almost every one of the new fabrics which have appeared in recent years requires special machinery for dyeing and finishing. The problems involved in devising means of dyeing expeditiously a new fabric, having regard to the choice of dyestuffs and contents and temperature of the dye-liquor to which one is restricted, and the final finish which the fabric is required to have, are such as require an intimate knowledge of the properties of the dyestuffs under very varied conditions, as well as of the physical properties of the fabric and of the materials which can be used in constructing the special machinery. In this connection it may be remarked that the most conspicuous successes have only been attained when the designer of the cloth and the dyer have worked in close collaboration.

Dye-a-Grams

This column doesn't care whether a shade is a color, or a color a shade, or a tint a hue or vice versa. What we are most in need of now is the types we are short of—technicalities may come later!

—o—

Speaking about shades, tints, hues and colors—one thing we all gotta hand Newport: They had *the* "tone" at the Chemical Show!—eh, Mr. Low?

—o—

A reason why some men don't stay long in one place is that they don't take enough interest in their work, or if they do, they take too much, and the "interest" they take affects the "principal"!

—o—

We don't blame anyone for talking about the weather these days. It's that kind of weather!

—o—

Legislators throughout the country are introducing freak bills. If they'd stop this introducing stuff and get acquainted with the Longworth bill, we'd say the country was *really* getting "back to normalcy."

—o—

Speaking of Exchange as it exists between Canada and the U. S.—properly speaking, it is Robbery!

—o—

In nearly all parts of the country textile mills are trying to find some means of making the cotton they mix with wool look "sheepish"!

—o—

Judging by the success of "Mr.

Ponzi," Boston may rightly be designated as the "Great Fish Center."

—o—

"Mellon Groomed for Cabinet Plum"—*headline*. And without any Luther Burbank grafting, either!

—o—

We recently read where General Bliss would encourage disarmament. Well that's easy; disarmament would encourage general bliss!

NOTES OF THE TRADE

The Lion Knitting Mills Company, Cleveland, Ohio, is operating plant at 3256 West Twenty-fifth Street equipped with seventy-one knitting machines and forty-eight sewing machines, making hosiery for men, women and children. The capital of the company is \$100,000. H. V. Ensten is president and L. H. Ensten is treasurer.

—

The Council of Swiss Chemists has been formed by the Swiss Chemists Society, the Swiss Society for the Chemical Industry and the Swiss Union of Analytical Chemists. The president of the new council is Dr. P. A. Guye, the vice-president Dr. A. Landolt and the secretary Dr. W. G. Baragiola. The purpose of the Council is to pass on all questions which are of general interest to Swiss chemistry and to represent Switzerland in the new International Union of Pure and Applied Chemistry.

—

The du Pont Chemical Company, Deep Water Point, near Carney's Point, N. J., is planning for the construction of a pipe line from Plant No. 2, at its former powder works, to its new dye plant. The line is to insure a suitable water supply for dye manufacture; it will be about two miles in length and is estimated to cost about \$200,000, including a new filter plant to be constructed. The source of water supply is Layton's Lake. The company constructed a pipe line to its powder works during the war period.



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Domination

By Robert Mountsier

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W. T. B. for February
Import**

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

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No. 11

"THE NEXT WAR" AND THE DYE SITUATION

British Chemist Warns Against Renewal of Germany's
World Domination as Dye Industry Here Seeks Protection

A LITTLE more comprehensive than usual in its survey of the relative positions of Germany, England and the United States with respect not alone to the dye industry but chemical industries in general, as well as "the next war," is the recent article by Robert Mountsier, a British chemist, in *The Annalist*, published by the New York Times Company. We present Mr. Mountsier's article this week in the belief that it should go on record with the trade, along with the Choate speech, General Mitchell's testimony, the Lefebure article and others, as a valuable addition to the literature bearing upon the very pressing case of the Dye bill in this country. Again the military note, quite properly, is dominant, and *THE REPORTER* was influenced in no small degree in its decision to reproduce the article by reason of this; for it is our increasingly firm conviction that of all the arguments in favor of the adoption of licensing, the absolute necessity of complete preparedness for modern warfare is the most impor-

tant and has the best chance of being understood, and hence, that only by properly emphasizing it, vigorously and persistently, can justice to the dye and the textile industries, and the country at large, be obtained from Congress. We also feel that you will be interested in reading of the duel between Germany and England for control of the alizarine situation as far back as 1869, of the methods used by the former to drive the British manufacturing company out of business, and of how the Government-aided Germans, beaten at their own game, managed nevertheless by adroit maneuvering to bring about a shortage of alizarine and other dyes and fine chemicals in England at the time the war broke out.

The article follows:

In the industrial warfare being waged between the great producing nations the chief struggle centers around the control of key industries, among the most important of which are the closely related dyestuff and chemical industries. In England and the United States these

industries, born of the war, are fighting for life; in Germany, for world domination.

Recently the British Parliament passed a bill controlling the importation of dyes, but only after the dyestuff industry had been disorganized by the extensive dumping of German dyes in the United Kingdom, and the chemical interests of England are demanding a similar bill for their protection. To protect the American dyestuff industry and make possible its further growth there is now before Congress a bill providing for control of the importation of dyes from foreign countries under a license system. By every means within their power the Germans are fighting to regain as far as possible the worldwide control of dyes and chemicals that was theirs before the war.

With hardly an industry in this country that is not dependent on dyestuffs and chemicals to a greater or less degree, special attention is being paid to these industries, but frequent references abroad to "the next war" and to "national security" in connection with them furnish additional reasons why European developments and points of view should receive general consideration in the United States.

Ignoring the League of Nations, the German manufacturer rarely fails to mention "the next war" when he is discussing his plans for the future. He has long known that the country which possesses highly developed dyestuff and chemical industries has in its factories potential arsenals for the manufacture of offensive and defensive weapons of war. The World War not only proved that he was correct, but it brought to the fore the importance of these industries in the manufacture of poison gases as an instrument of warfare.

EUROPE'S VIEWS

Unhampered by any anti-trust laws, the concerns belonging to the German dyestuffs merger voted at a recent meeting to extend for a long period the existing agreements, which regulate production, prices and sales at home and abroad. In giving reasons for this step

the Board of Directors in their statement called attention to the fact that the dyestuff industry in other countries, especially the United States, had made enormous progress during the war and threatened to drive Germany from American and other export markets. In the face of this new and powerful competition, said the directors, it was of the utmost importance that German manufacturers should close their ranks and by concentration and co-ordination of effort consolidate the position of the German industry. In order to place the contemplated extension of nitrate production on a secure basis, the directors decided to take over from the Badische Anilin und Sodafabrik, the synthetic ammonia plants at Oppau and Leuna, the new company to be capitalized at 500,000,000 marks and to be held by the firms comprising the Interessens Gemeinschaft.

The English consider their new dye industry vital to the empire, not only as a key industry, with organic research resulting in the development of new industries, but because it gives national security as a guarantee of peace and is of political importance. Both the British and French have learned by experience how costly the German monopoly of dyestuffs could be both in peace and in war. Shortly after the armistice the Germans used their predominance in the supply of dyes for political bargaining when the lack of dyes in Alsace became a serious problem to the French. The war development of the dye industry in England saved the British from similar embarrassment during the Peace Conference.

However, when the famous Sankey judgment, handed down in December, 1919, declared illegal the method of prohibiting importations by order in council, the great dye establishments at Huddersfield and Blackley, which had previously been brought together under a unified control, with the British Government represented, were hard hit by the unimpeded flow of German dyes and chemicals into the United Kingdom.

Favored by the greatly depreciated value of the mark and helped by im-

proved fuel and labor conditions, the German manufacturers flooded England with dyestuffs last year, determined, as they were, to regain pre-war domination in this market. In November it was estimated that Liverpool warehouses alone held German dyestuffs of a total value of £4,500,000. And the annual value of the British dye trade is only £2,000,000.

In the debate on the Dye Supplies bill in Parliament it was argued that if protection were not granted the industry the danger lay not in the loss of this annual value to the country, but in the loss of plant, machinery and organic chemists and in the domination of the textile trade, valued at £240,000,000 a year, by the Germans through their control and manipulation of dye supplies and prices. In discussing the bill Mr. Asquith contended that the success of the German manufacturers was due solely to want of enterprise and to apathy on the part of the English manufacturers. On the other hand, supporters of the bill asserted that, to a great extent, the German monopoly was due to direct assistance for research from the Government and to the protection which the German industry had in its own domestic markets.

HOW GERMANY WORKS

The history of alizarine in England and Germany provides a striking example of German monopolistic methods. The practical system for the manufacture of alizarine, which is used in dyeing fabrics various shades of red, was patented almost simultaneously in England and Germany in the year 1869. The English patentee was Perkin, and the Badische Company became the owners of the German patents. Both patentees exchanged licenses, so that Perkin obtained a monopoly for the manufacture of alizarine in Great Britain. In 1873 more than twice as much of the dye was manufactured in Germany as was produced by Perkin, and a few years later the Germans completely dominated the supply. This was due to the commercial enterprise of the German manufacturers rather than to their superior-

ity in science or large-scale production. By sending representatives abroad and establishing agencies all over the world the Germans had, by 1881, got so great a hold on the market that they joined forces and formed the first Alizarine Convention for the express purpose of raising prices. As a result the Germans cleared \$5,000,000 on this dye alone in one year.

The next year, 1882, which was the year before the expiration of the patent, the German manufacturers of alizarine issued a circular in which the British consumers were informed that their supplies of the dye would be cut off unless they renewed their contracts at a new and increased price for a period of twelve months after the expiration of the patent in 1883. Since the price advance was highly unreasonable, the Scotch turkey red dyers replied to this threatening circular by going on short time to conserve their stocks and formed a co-operative organization, the British Alizarine Company, to meet their needs for this dye. As a conse-

quence the first Alizarine Convention came to an end in 1885 and prices reached a record low level. But the extraordinary profits made by the German dye industry through the alizarine monopoly enabled them to write off the cost of their works, to reconstruct them with large laboratories and to develop them with skilled research chemists.

The formation of the British Alizarine Company saved the Scotch turkey red dyers. Failing to put this company out of business, the Germans finally, in 1900, succeeded in making a convention that included the British company. This convention guaranteed to the British organization the sale of a certain quantity of alizarine at a fixed price. This quantity turned out to be totally inadequate for the needs of the United Kingdom and colonies, and, when the war broke out, there was consequently an acute shortage of alizarine.

Similar shortages were found in all other dyestuffs and practically all chemical supplies. During the first years of the war the British Government was faced with tremendous problems in attempting to provide sufficient quantities of dyes for textiles and to produce sufficient high explosives to feed the guns of the army and navy.

Of such importance is the British dye industry now considered for national defense that two Governments and Parliaments approved the policy "that the importation of all foreign dyestuffs shall be controlled by a system of licenses for not less than ten years after the war, in order to safeguard this industry against the great efforts which the German firms are certain to make after the war to destroy all we have accomplished during the war and to make this industry again subservient to Germany." The new Dye Supplies act prohibits, during the next ten years, the importation of all synthetic dyestuffs and coloring matters, and all organic intermediate products used in their manufacture, but the act does not apply to goods imported for exportation after transit in the United Kingdom or by way of transhipment.

A THREAT TO WORLD PEACE

The British War Office has pointed out the fundamental part played by the German dyestuff industry in keeping the German army in the field. Every toxic substance used in the field by the Germans during the war, with one unimportant exception, was made by the German dyestuff trust, the *Interessen Gemeinschaft*. These substances were made by the *Interessen Gemeinschaft* in plants suitable for the manufacture of aniline dyes and of intermediate products. The various companies forming the trust contributed the following to the chemical warfare organization of the German army:

1. Great flexible plants suitable for making almost any organic substance on a large scale at short notice;
2. A highly skilled personnel, capable of successfully conducting the large scale manufacture of complicated organic substances;
3. A large research staff, experienced in making laboratory process suitable for technical scale work.

In a statement issued by the Association of British Chemical Manufacturers it is asserted that the peace of the world will be threatened if the chemical industry in Great Britain is again reduced to its pre-war dependence on Germany for fine chemical production. "The development of chemical warfare and the growing importance of chemistry in abating disease especially make the organic chemical industry of vital importance," says the statement. "This aspect of the British fine chemical industry cannot be too much emphasized. Without such an industry we are dependent upon foreign countries for the following:

"Analytical reagents with which to test steel and other metals and materials used in manufacturing shells, guns, airplanes and other munitions of war;

"Synthetic organic drugs—anesthetics, hypnotics, antipyretics, antiseptics and venereal remedies;

"The pure chemical substances required by our universities and other institutions in their research and teaching laboratories;

"The utilization of the by-products in the industry which, otherwise, are wasted but which can be elaborated in the fine chemical industry into countless products, such as drugs, perfumes and photographic chemicals, giving employment to thousands of persons."

Among chemicals of German origin being offered in England at the cost of production or less are salicylic acid, aspirin, bromides, acetanilide, saccharin, atrophine, benzoic acid and benzoates. Already the production of phenacetin is being abandoned in England because of foreign imports. With the chemical industry being disorganized the British Government has promised it protection through a general bill dealing with the key industries.

The first chemical that came into prominence in England during the war was anhydrous sulphuric acid. The total pre-war demand for this acid was 500 tons a week, whereas German production was at least 10,000 tons weekly. As soon as the English found it necessary to manufacture nitroglycerine, guncotton and T. N. T. in large quantities they were greatly handicapped by the lack of sufficiently large plant. There was also lack of plant for producing chlorine, hydrogen and ammonia. In 1913 the Germans manufactured 100,000 tons of ammonia from atmospheric nitrogen at a cost of about \$25 a ton, and in 1914 the whole of it was placed on the European market at more than \$50 a ton. With their stocks of sodium nitrate what they were, the Germans could not have continued the war for more than two years had it not

been for their development of the process of fixing atmospheric nitrogen in the form of ammonia.

"If we cannot produce a counter," said Dr. Herbert Levinstein, the English chemist, in discussing the need of protection for the British chemical industry, "the next war will certainly be a chemical war, and the results will be extraordinarily quick and decisive. Why was the last war in its later stages a chemical war? After the first battle of the Marne the Germans selected chemistry as their most likely means of effecting a surprise, because they were the sole belligerent possessing a large dyestuffs industry. Chemical warfare only failed to bring them a decision partly because they did not believe in their own weapon, and therefore were not able to follow up the results obtained—e. g., the use of chlorine in the second battle of Ypres—and partly because they used their products on too narrow a front to secure a strategic result from the initial surprise—e. g., the use of mustard gas.

"All the belligerents would have used chemical means to effect their military objects on a more stupendous scale than was already the case in 1918 had the war dragged on to a further spring campaign. Already at the end of 1918 70 per cent of the casualties were caused by gas. So long as there is no counter to the rapid production of toxic substances in Germany, the world is not safe; the

(Continued on page 12.)

AMERICAN DYESTUFF REPORTER

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A. P. HOWES, President
 LAURANCE T. CLARK, Editor

"NOTHING ELSE WILL DO"

Those of the British who are interested—and interest appears to assay higher per ton of British than per similar quantity of Americans—in seeing England make herself completely independent of all foreign powers as regards anything in the way of chemicals having remotely to do with war or with the all-important British textile industries, are wisely meditating a "Key Industries Bill" as a concomitant of the Dyestuffs Import Regulation Act, the design being to fill up the remaining chinks in the fortifications built around the heart of British defenses. And, according to press reports, this move has stirred up the original opponents of the Dyestuffs Act into a fine frenzy of outraged dignity and punctured self-esteem.

There is nothing more serious in their outbursts, either to the English or to supporters of licensing in this country, than the fact that a little group of hide-bound reactionaries and ancestor-worshippers is in the process of painfully awakening to the—to them—startling and annoying truth that "the world do move."

However, sentiment among this group crystallized recently at a meeting of the "Eighty Club" of Manchester, which has appointed a committee to "look into" the British dye industry. This committee is soon to make a report, and during the course of some remarks describing the reasons for appointing it Major Barnes,

M.P., declared that one of the things which had clearly been shown by the investigation was the fact that certain interests which, through the circumstances of the war, had been engaged very profitably in that particular industry, had formed the intention of maintaining their advantageous position of the war in the aftertime of peace. The Major stated that the Key Industries bill was going to pursue the policy of the Dyes bill toward a great many other things; and, reverting to tactical terms, he added that, after comparing the present circumstances with those of fifty years ago, he considered that the old methods represented the frank frontal attack on free trade, but that now the methods had changed and an attempt was being made to turn the position by a flank attack. Then he waxed sarcastic:

"Not that they (the dye makers) wish to make money out of it," he snorted. "They never dream about that! But with the next war in view they are prepared to provide the necessary poison-gas plants. There is really no national interest in it at all. It is purely a question of private interest."

Without our going over the Major's line of reasoning point by point, it strikingly shows to what extent the tariff question can gain a hold on its victims when assimilated in habit-forming quantities. How much that sounds like home, where there are also some who have not yet become aware of the fact that the Lincoln administration—unfortunately—ended some years ago, and that the munitions of to-day in no respect resemble those used during the Civil War!

O. B. Hopkins, the statistician, agrees with the Major—in some things. In an absorbing article in the *Journal of Industrial and Engineering Chemistry*, he considers that there is every reason to suppose that the British Dyestuffs Act will serve, as its opponents charge, as the entering wedge in opening the way to protec-

tion in some form for other "key" industries.

"In particular," he opines, "the chemical manufacturers seem to be on solid ground in urging that if the dye industry is to be saved, it will be necessary to support also the closely allied branches engaged in the manufacture of by-products, which will insure profits from the dyes themselves. The industry is hopeful that the anti-dumping bill (the Key Industries bill) promised in the near future will provide for the control desired for certain other fine chemicals. It is an interesting fact that English manufacturers are not asking for protection in the shape of duties, but are united in their demand for license control."

Hear what Mr. Hopkins says about Germany's movements just after the Sankey decision of December, 1919:

"Following this decision, German agents began to take orders at prices the English manufacturers could not

meet. Although the actual importation of dyes based on these orders was not extraordinarily heavy, it soon became evident that German manufacturers could undermine the English industry unless the Government took steps to prevent it. The consequent agitation finally led to the passage of the Dyestuffs Import Regulation Act of 1920, which provided for licensing imports without the imposition of a duty. . . . The passage of such an act in England has a significance that should be appreciated by all Americans who are in any way concerned with or responsible for the future of the industry in this country."

That takes in pretty much all of us. Those who are not responsible for the dye industry's future are concerned with it. The butcher is concerned; so is the baker and the candlestick-maker, and so, likewise, is even former Senator Thomas, just as though that gentleman were not in

any way connected with the textile industries of his native State! This is everybody's game, but that fact is not yet widely enough known to count with Congress, and it cannot become widely enough known to count before the Dye bill will again be up for consideration.

Therefore, you, and you—and you—all of you who *do* understand: Write *again* to your representatives, now, before real action starts under the Harding administration, and tell them to take two or three little lessons from recent events in England, the first and foremost being that licensing for essential key industries, under such circumstances as our dye industry is facing, is absolutely necessary, certain, sound and safe; that the license scheme's real connection with the tariff lies chiefly in the fact that unless we adopt it we shall one day be unable to collect a tariff on anything from anybody, but instead may be privileged to divide our resources with some foreign power having no morals to speak of but plenty of poison gas and airplanes, and that every additional week of delay causes potential dye chemists and researchers to choose something more certain and profitable for a career—like plumbing.

Property owners can improve the appearance of homes and other buildings by demanding the use of from 30 to 50 per cent of zinc oxide in the paint pigment. This material increases the life of both exterior and interior coatings,

insures lasting luster and prevents fading. Paint which includes the proper proportion of zinc in the pigment mixture better finds its way into the pores of the surface, and thus affords excellent protection against deterioration.

DYES AND "THE NEXT WAR"

(Continued from page 9.)

menace of the Rhine factories lies not only in their geographical position but in the fact that they are unique. That the next war will begin as a chemical war is certain, because it is an arm which has now been tried, the principles of which are well known to soldiers."

Dr. Levinstein referred to the research work in chemical warfare that is being carried on in this country and to the measures being taken in this country to safeguard our dyestuff industry. As noted in *The Annalist* of January 3, the dyestuff industry in this country has been exporting, in addition to what it supplies to domestic consumers, as large a quantity of dyes as the country's total annual consumption amounted to before 1914. Developed during the war into a key industry of large proportions, it is now seeking protection both from an equally strong rival in England and from Germany's industry, which remains tremendously powerful in spite of defeat and the peace treaty. In 1918 Germany had 15,204 plants manufacturing chemicals and dyestuffs, and the following year 15,060, which showed a comparatively small decrease, ascribed mainly to the loss of Alsace-Lorraine. The number of plants in the United Kingdom in 1919 was 2,228, which during the first six months of 1920 employed 265,000 workers, about half the number of workers in the German plants. In 1919 the manufacturers of dyes in the United Kingdom spent about \$500,000 on their research organizations.

Whatever the action of Congress regarding the importation of dyestuffs into this country, it is a matter of interest not merely to the manufactur-

ers of dyes and chemicals in the United States but to the American people as a whole, even though more particularly concerning those engaged in mining and agriculture, in the production of coal, oil and gas, and in the manufacture of products so diversified as textiles, building materials, drugs, medicines, explosives, rubber and leather products, fibers, matches, cellulose, glass, paints and paper.

COTTON CONVENTION DATES CHANGED

In order not to conflict with the annual convention of the Chamber of Commerce of the United States, which is to take place at Atlantic City on April 27, 28 and 29, it has been decided to change the date of the spring meeting of the National Association of Cotton Manufacturers to April 20, 21 and 22. In addition to James Thomson, chairman, and Morgan Butler, vice-chairman, the following compose the General Arrangements Committee: George B. Adams, Frederick A. Andres, Jr., Arthur Atwood, Jr., Edwin H. Baker, Daniel M. Bates, Colin C. Bell, Sydney Borden, Garrett D. Bowne, Jr., Charles B. Burleigh, Frank L. Carpenter, Charles H. Fish, Arnold C. Gardner, Walter M. Hastings, Frederic W. Howe, Earl S. Jenckes, Frank B. Kenney, Fred Lacey, James Lawrence, Jr., Ralph Lawson, Fred C. McDevitt, Kenneth Moller, Ernest L. Morrill, John Neild, George Nichols, George Francis Payne, John Porteous, Isaac T. Prosser, Raymond A. Rice, W. Ran-

dolph Sides, Albert G. Smith, Antonio Spencer, Wallace I. Stimpson and John E. Tobin.

FOREIGN DYES LICENSED BY W. T. B. FOR FEBRUARY IMPORT

Following is a complete list giving the types and quantities of dyestuffs for the importation of which into the United States licenses were granted by the War Trade Board during February. This tabulation is being issued by the American Dyes Institute, and it is announced that anyone interested in the manufacture of dyestuffs who has not received a copy may obtain one by application to that organization's headquarters, 320 Broadway, New York. It should be noted that, in addition to the colors listed here, there were items licensed for import from England as follows:

Dianol Fast Blue 2B.....200 lbs.
Durasol Acid Blue B.....300 lbs.

Designation of Dye	Switzer-	
	Germany (lbs.)	land (lbs.)
Acetyl Red BBX.....	10	..
Acid Alizarine Green 3G..	100	..
Acid Blue RBF.....	..	1,320
Acid Brown RN.....	..	1,000
Acid Cyanine BF.....	1,000	..
Acid Milling Black B.....	..	200
Acid Milling Black B-652 ..	..	3,000
Acid Milling Red G-631..	..	1,250
Acid Violet 4BNS.....	..	1,200
Acid Violet 6BN.....	100	660
Acid Wool Blue RL-647..	..	2,700

Algol Blue 3G Powder....	10	..	Ciba Red G—10% .....	..	990
Algol Yellow WF Powder	10	..	Ciba Scarlet G Extra Pdr.	..	110
Alizarine VI Extra Pure..	3,000	..	Ciba Violet B Paste.....	..	1,100
Alizarine Blue JR Powder	10	..	Ciba Violet R Paste.....	..	1,100
Alizarine Blue SAP.....	300	..	Cibanone Black B .....	..	2,420
Alizarine Blue Sky	660	..	Cibanone Brown V .....	..	1,100
Alizarine Cyanine Green G			Cibanone Orange R Pdr..	..	110
Extra Powder.....	200	..	Columbia Violet R	100	..
Alizarine Indigo G.....	1,000	..	Congo Orange R	300	..
Alizarine Orange SW Pdr.	10	..	Coriphosphine OX Extra..	660	..
Alizarine Red WS Powder	25	..	Cupranile Brown G .....	..	1,100
Alizarine Rubinol GW....	50	..	Cupranile Brown R .....	..	1,100
Alizarine Rubinol R.....	2,250	..	Cutch Brown RR.....	..	150
Amido Azo Black EG....	100	..	Cyanine B	50	..
Amido Naphthol Red BB..	100	..	Diazo Brilliant Orange GR		
Anthraflavone GC Paste..	15	..	Extra	25	..
Autochrome Blue R Pat...	50	..	Diazo Brilliant Scarlet G		
Azo Cyanine GR Extra...	100	..	Extra	5	..
Azo Milling Yellow 5G....	100	..	Diazo Brown 3G	50	..
Benzo Fast Scarlet 4BG...	200	..	Diazo Fast Yellow 2G....	20	..
Brilliant Acid Blue A.....	520	..	Diphenyl Brown 3GNC old		
Brilliant Phosphine 5G 300%	..	440	—195 .....	..	1,000
Brilliant Sky Blue 5G.....	25	..	Diphenyl Chlorine Yellow		
Carbogen B Pat.....	100	..	FF Supra—287 .....	..	1,500
Chicago Red 3B—368.....	..	800	Diphenyl Green KGW Supra		
Chinoline Yellow	100	..	—288 .....	..	500
Chloramine Green G .....	..	1,200	Direct Cutch Brown GR..	..	220
Chlorantine Fast Light Blue			Direct Green B.....	..	300
2GL .....	..	600	Direct Red CES.....	100	..
Chlorantine Fast Light Yel-			Eclipse Brown BK—371...	..	200
low 4GL .....	..	440	Electric Blue (Color Lake)	524	..
Chlorantine Fast Violet BL	..	330	Erio Chrome Azurol BX—		
Chlorantine Fast Violet 4BL	..	1,320	1041 .....	..	1,500
Chlorantine Orange TRL..	..	660	Erio Chrome Blue Black		
Chloramine Black Ex. Conc.	..	300	BC—926 .....	..	3,000
Chronal Blue CG—939.....	220	..	Erio Floxine 2G.....	..	2,000
Chrome Azurol SXT—1046	..	500	Erioglaucine A—501 .....	..	1,500
Chrome Blue Brilliant G—			Erio Rubine 2BC .....	..	5,000
1039 .....	..	200	Erio Violet BC—505 .....	..	3,000
Chrome Brown RVV—899.	..	500	Erio Violet RL Supra....	..	5,000
Chrome Fast Green G Conc.	..	660	Erio Violet RL Supra—265	..	600
Chrysoline—664 .....	..	500	Fast Acid Green BB.....	100	..
Ciba Blue 2B .....	..	70	Fast Acid Magenta G....	50	..
Ciba Heliotrope B Powder	..	220	Fast Green Bluish.....	100	100
Ciba Red G .....	..	1,100	Fast Light Yellow 2G.....	..	2,000
			Fast Light Yellow 3G....	500	..
			Flavazin L	200	..
			Flavazin 5GL	100	..
			Galleine JRG Paste—1021.	..	1,000
			Gallamine Blue Paste—50.	..	500
			Hansa Rubine	2,000	..
			Hansa Yellow	1,000	..
			Hydrozine Yellow LEG... 100	..	..
			Indanthrene Blue GCD		
			(Double)	400	..
			Indanthrene Blue 3G	25	..
			Indanthrene Claret B Extra	800	..
			Indanthrene Red BN Ex.. 1,000	..	..
			Indanthrene Red BN Extra		
			Paste	500	..
			Indanthrene Red Violet		

RRN	1,000	..
Ink Blue BJTBNOO.....	500	..
Janus Red B	200	..
Janus Yellow G	300	..
Jasmine High Conc.—729. ..	500	..
Kerzengelb	11	..
Kiton Fast Violet 10B....	3,500	..
Kiton Fast Yellow 3G....	440	..
Kiton Pure Blue V.....	880	..
Lithol Orange	2,000	..
Methyl Lyone Blue	8,000	..
Methyl Silk Blue new—706 ..	500	..
Methylene Green P	660	..
Methylene Green W—748 . ..	500	..
Mimosa Z Conc.—331.....	700	..
Naphthalene Blue B	200	..
Naphthalene Green V	100	..
Napthamine Direct Blue 2R	100	..
Napthogene Pure Blue 4B. .	50	..
Napththol AS (Samples Consumer)	4	..
New Patent Blue B—563... .	150	..
Night Blue	10	..
Orange Developer R.....	10	..
Orange IV Powder—522 . .	500	..
Oxacid Blue 4B	100	..
Oxacid Red BB	100	..
Oxacid Red 6B	100	..
Oxy Acid Violet ROO....	100	..
Palatine Light Yellow....	200	..
Patent Marine Blue LE... .	200	..
Pat. Phosphine CG—300% . .	2,200	..
Pat. Phosphine G—300% . .	100	2,200
Pat. Phosphine GG—300% . .	..	1,100
Pat. Phosphine R—300% . .	..	1,100
Phosphine M—300% .....	..	1,210
Polyphenyl Orange RC....	..	5,000
Polyphenyl O'nge RC—142 ..	..	800
Pyrazol Orange G.....	..	60
Pyrogene Olive SG.....	..	880
Rhodamine B .....	..	660
Rhodamine 6G	50	..
Rhodamine 6G Extra	100	..
Scarlet Red, Medicinal....	110	..
Setoglaurine—753 .....	..	1,200
Tartrazine .....	..	4,840
Thional Yellow G.....	..	2,000
Trisulfon Brown GG .....	..	300
Trisulfon Violet B .....	..	150
Trisulfon Violet N .....	..	4,500
Turkish Red Lac.....	220	..
Union Black .....	..	3,000
Victoria Blue B—142.8....	..	500
Victoria Blue BO	200	..
Wool Green SC—655 .....	..	3,200
Xylene Blue VS .....	..	440
Xylene Light Yellow 2G.. .	..	661
Xylene Yellow GG .....	..	3,800

ONLY TUPPENCE, NOW, TO DYE MILADY'S GOWN

E. B. Leary Says Cost Has Dropped 75 Per Cent—New Colorimeter Banishes Guesswork—Dyer of Future to Be Techni- cally Trained Man

It costs very little to dye the modern scanty gown of womankind, according to Edward B. Leary, in his address Monday evening, March 7, before the Rochester Section of the American Chemical Society meeting in the Reynolds Laboratory of the University of Rochester.

Two decades ago when skirts were longer and sleeves more voluminous than they are now, a woman's dress could be dyed at a cost of about 5 cents.

"The actual cost of the Alice Blue dye in a modern dress," said Mr. Leary, "would be roughly figured at about one-fourth of that sum, namely two cents. This is due to the much smaller amount

of material required nowadays to cover the same square surface."

Hope for the average man, or woman either, who may be concerned about the exact matching of dress samples, is held out by a new device for measuring color values which was described by the speaker.

The old method of matching certain colors in order to duplicate an order was to dye several samples of yarn skeins at the time the fabric concerned was being dyed. The handling of so many samples has now been made unnecessary by the use of a new type of colorimeter, which Mr. Leary demonstrated. By means of it, the shade and hue of a color are determined and are then recorded in accordance with a certain number, which corresponds to standard color filters and wedges used with an ordinary daylight lamp. Instead of depending upon the old "rule of thumb" method of trusting to the eye or to the often fanciful trade names of a color, the merchant may order fabrics which are of a hue expressed by an exact numerical ratio.

This progress in the judging of colors is another development of the growing American dye industry. Mr. Leary, who is the head of a large dye works in Rochester, said that in the past dyeing had been in the hands of mere craftsmen, who were without training. They had learned their trade, with its thousands of secrets, by serving an apprenticeship. Although many of the good features of the craft were handed down, so also were many faults and superstitions, which were due to the personality of the individual.

"This state of things," said Mr. Leary, "is rapidly changing, and the future will see the dyer not an apprentice-trained craftsman, but a technically trained dye chemist who is qualified to use the thousand and one delicate scientific instruments to match his shades and colors."

Mr. Leary has recently been appointed chairman of the Technical Research Committee selected by the National Society of Colors and Dyes. This organization has recently apportioned the sum of \$5,000 to the Mellon Institute

of Pittsburgh, for defraying the expenses of a research chemist who will confine his attention entirely to dyeing.

Further developments in the dye industry are to be announced at the forthcoming spring meeting of the American Chemical Society, to be held in Rochester the latter part of April. One of the features of this gathering of several thousand chemists will be the sessions of the Dye Division, at which important inventions and discoveries in the color industry will be announced and discussed.

"SAVE MONEY; FOREGO BEER" WAS ADVICE TO DYER OF 1835

Drinking Before Breakfast Was Frowned Upon, and Swearing Strictly Taboo

The following notice to the work people of a Lancashire dye works has been found in the storeroom of an old mill in that section:

REGULATIONS ADOPTED JANUARY, 1835

A Bank for Savings is establish'd for the benefit of the Workmen, whereby they may if so disposed secure to themselves, by weekly deposits a Fund for assistance in the time of need Interest at the rate of Four per Cent per Annum will be allow'd upon deposits which will be received in Sums of One Shilling or above This arrangement it is hoped will induce a more strict economy in the Money expended while at work for Beer, and which being thus saved may be turned to more profitable account.

One Man is appointed to go out Twice in the Morning, between the hours of Eleven and Twelve o'Clock also in the Afternoon between the hours of Four and Five o'Clock and in the Evening when overtime is made, between the hours of Seven and Eight o'Clock, who will provide the Beer required at each period.

Drinking before Breakfast, and Smoking during Working hours are both strictly prohibited.

The Men are not allowed to leave the premises except at Meal times without leave.

The Apprentices are forbidden on any pretence whatever to go out upon errands for the Men.

Scouring upon the Premises is not allowed. Any of the Men by obtaining leave may have a Job Dyed, but it must be given to the Foreman for that purpose This regulation is intended to prevent the mean practice of dyeing Jobs clandestinely, all of which if discovered will be Seized.

Every Man is expected to refrain from Quarrelling, Swearing or any noisy talking while at work, and in all matters and proceedings to conform to the general rules of decency and good order, thereby maintaining the respectable character for which the Men of this establishment have ever been distinguished, while at the same time they promote the interest of themselves and their employers.

Any Man upon the premises who is unwilling to conform to these regulations should immediately look out for employ elsewhere, a strict observance of them having been determined upon.
—*Dyer & Calico Printer.*

LONGWORTH TO ATTEND A. C. S. SPRING MEETING

Dye Chemists Darged to Keep Up Membership and Present Papers

Close to the chemical center of the United States, and having 30,000 workers engaged in chemical and allied industries, the city of Rochester is preparing to welcome the hosts of the American Chemical Society which on April 25 begins a week's session in the Flower City.

The plans for the meeting indicates that fully 2,500 chemists will attend.

Nicholas Longworth, of the House of Representatives, and the author of the all-important Dye bill affecting the dye and chemical industries of the United States, will be present.

The gathering is especially significant as it is held in a city where there is situated a laboratory which with the co-operation of other laboratories and chemical plants throughout the country, is engaged in the successful production of rare chemicals which before the war were brought from Germany.

Rochester has also developed an optical glass industry which manufactures lenses for field glasses, telescopes and range finders. Before the outbreak of hostilities in Europe lenses were made in Germany almost exclusively, and to such an extent that many of the instruments of precision used by the American army and navy had lenses which had been made beyond the Rhine.

Official headquarters of the Society will be the Hotel Rochester, while the divisional and sectional meetings will be conducted at Mechanics Institute.

The American Chemical Society is the largest scientific body in the world and consists of 15,500 members, of whom more than 14,000 are in this country and the remainder distributed through every civilized country.

On Wednesday and Thursday, April 26 and 27, the Dye Division of the Society will assemble at Mechanics Institute, 55 South Plymouth Avenue, where all divisional meetings will be held. Scientific research is, has been and always will be the backbone of the Dye industry, and these semi-annual meetings afford the dye chemists an opportunity to participate in the presentation

of scientific work in this field and to meet other chemists engaged in like work. For this reason The REPORTER urges all to keep up their membership in this division, and all those who have not already joined, to do so at once and plan to present a paper at the Rochester meeting. Dues consist of \$1 per year, and titles of prospective papers should be sent to the secretary of the Dye Division, American Chemical Society, R. Norris Shreve, 43 Fifth Avenue, New York.

Dye-a-Grams

Ed. Gross, of the Asco Corporation, is in Detroit again. There are very few mills in this section, but there is a play entitled "Up in Mabel's Room" at one of the theaters.

There was an old dyer named Doyle,
Who fretted and fussed all the while.
The fireman just grinned;
He liked being chinned,
For lack of the steam for a boil!

What *has* become of Roosevelt's
fifth cousin?

When the mills start up again,
we've an idea there'll be a lot of
sleeping sickness about the time the
whistles blow!

All Will Hays has to do to become
a popular P. G. is to find a way to
eliminate "please remit" from the
mails.

It may be that our soldiers are being kept in Europe to enable them to collect the mail sent them during the war!

Card in a dyer and cleaner's window: "Steam Cleans, Rejuvenates, Destroys Germs." But why go to the trouble of cleaning and rejuvenating these germs if they are going to be destroyed?

A remedy for a man who says he is tired of being the "goat" would be for him to stop butting in!

G. E. T.

NOTES OF THE TRADE

Arthur J. Peterson, overseer of dyeing for the Thomas Kent Manufacturing Company, Clifton Heights, Pa., has severed his connection with that company.

The Sandoz Chemical Works, New York, have filed notice of reorganization with an active capital of \$5,000 and 1,000 shares of common stock, no par value.

The United Dyewood Company has declared quarterly dividends of 1½ per cent on the common and 1¾ per cent on the preferred stocks, payable April 1 to holders of record March 15.

The Tar Reduction Company, Jersey City, N. J., has been incorporated, with a capital of \$5,000, to manufacture dyestuffs. The incorporators are James G. Affleck, Jr., Louis A. Middlebrook and Merrill N. Gates.

Frank H. Moran has accepted the position as overseer of dyeing for the Hampshire Woolen Company, Ashuelot, N. H. Mr. Moran comes from Dexter, Me.

The Kasko Chemical Company, 25 East Twenty-first Street, Bayonne, N. J., has filed notice of organization to manufacture chemicals and dyestuffs. John Kaslikowsky heads the company.



AMERICAN DYESTUFF REPORTER

Vol. VIII, No. 12

Mar. 21, 1921



THIS ISSUE IS THE
MARCH EXPORT NUMBER

The Ubiquitous Propagandist

Hard-Working Individual
Catches Up with Production
and Issues 1921 Spring Sample
Card, Including Choice
Rumors of Abandonment of
Licensing

Act II, Scene 1: The Police Station

An Editorial

German Dye Competition Beginning to Be Felt in Far East

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

New York, March 21, 1921

No. 12

THE UBIQUITOUS PROPAGANDIST

Hard-Working Individual Catches Up with Production and Issues 1921 Spring Sample Card, Including Choice Rumors of Abandonment of Licensing

BACK among his native plains of Colorado, reading the news from the late scene of his activities, a peculiarly smug and self-satisfied grin is likely just about now to be overspreading the features of one Charles Spalding Thomas, former soloist of the Senate Choral Society. There is every reason why he should be pleased; there is every reason why he should enjoy, if he will, his fleeting moment of satisfaction while the enjoying remains good, since he is now experiencing the pleasure of seeing what he, no doubt, hopefully believes to be the fruition of his herculean performances of nearly a year ago.

For there is madness—there's no other name for it—in the news coming out of Washington these last few days. There have been vague rumors before; mere hints, which began even as the "little cloud out of the sea, like a man's hand"; but nothing up to last week so large and definite, nor passing itself off so successfully in the guise of portentous-

ness. It is genuinely amazing if true, and nothing short of downright felonious if exaggerated or "played up" with the idea of creating a sensation in these comparatively dull times while the industry is awaiting a reconsideration of its case.

According to the Washington Bureau of the "Journal of Commerce," then, reports from "reliable trade sources" are to the effect that the efforts of dye manufacturers to obtain an agreement with textile producers as regards the provisions of the proposed Federal licensing bill, have practically been abandoned.

"It will be remembered," the dispatch states, "that the reason why the proposed license bill did not pass at the last short session of Congress was the development of a sharp opposition of feeling between textile manufacturers who consume dyes, and the dye producers themselves. The textile men were so fearful that the licensing law would result in putting them in the hands of the dye manufacturers that they made a show

of strength which led Congressional leaders to recommend that the conflicting interests should reconcile their differences before they went any farther, as otherwise they would run the risk of a lengthy Congressional controversy. Eventually it was reported that they would be able to reach an agreement, but the prospect of such a result has gradually disappeared."

Where, then, are the Representatives and Senators constituting a majority of Congress who favor the licensing form of protection, and who have said they would support it? The proposal of the Congressional leaders, presumably Senator Penrose and a few others, that differences should be settled "out of court" before the bill was again brought up for discussion, is precisely the same as that made by Lloyd George with regard to the British Dyestuff Import Regulation Act. It is undoubtedly the best way of going about it, as we have ventured to suggest ere this, but—does it sound altogether plausible to say that because an agreement could not be reached, the dye fraternity would thus abandon one of the most important national defensive measures which have ever been framed merely because of the prospect of "a lengthy Congressional controversy"? If there is one thing the dye industry should be accustomed to more than another by this time, it is a lengthy Congressional controversy. What does the correspondent mean by "lengthy"? A week? That's nothing—absolutely nothing; if one could be assured that within a week the Dye bill would become a law, the country would be open to congratulations of the most hearty character. A month, then? It is impossible. The controversy could not continue a month, once the closure rule was put into operation. The whole thing is absurd. Who are these "textile interests" who have so suddenly assumed complete control over Congress? Might it not be better to read in place of this appellation the words:

"German interests," or "pro-German lobbyists"? Those are the forces which have been opposing the Dye bill. There are but few engaged in the textile industries, dependent upon a steady supply of dyestuffs, who have remained so blind that they cannot see that removal of the "menace" of American control of an absolutely essential part of their stock-in-trade simply means the substitution of German control.

You may also read in the news what the Government has just done to the Eastman Kodak Company, under the Sherman law. It is a case which has a direct bearing on the matter under discussion, and the details will bear rehearsing for the possible edification of those who are said to be in an agony of apprehension lest the Great American Dye Octopus strangle them.

The Eastman Kodak Company has been ordered to sell what is known as the Folmer & Schwing-Century Division, including the trade names Graflex, Graphic and Century—which are three famous makes of cameras—together with the factory and all tools and equipment. The company is likewise ordered to sell the Premo factory and equipment, and the trade name Premo, which refers to another line of cameras, films and accessories.

The trade name Artura, which refers to printing papers and mounts, is to be sold, and the company is required to disclose to the purchaser the Artura formula. The trade names Seed, Stanley and Standard, three well-known brands of photographic plates, are to be sold and the formulae for their production disclosed. Furthermore, if an intending purchaser of the disclosure of one of the formulae is desirous of purchasing a factory as well, the company will be obliged to sell its American Aristo plant at Jamestown, "at a fair and reasonable price." Two years are allowed in which to dispose of these various properties, at the end of which time, if the sales have not been made, the properties are to be put up at auction,

with a minimum price to be agreed upon between the Government and the Eastman Company.

Mr. Eastman, who controls these considerable properties and a number besides, when a young man managed to earn a few extra dollars to eke out his small but agile salary as a clerk by the laborious production o' nights of his own brand of photographic plates in a little two-by-four room stuck up under the eaves of a ramshackle office building on a side street. But he grew, at last, too big, and now the Government is legislating some of his bigness away—dividing up an organization which had come to dominate its own field. This the Government is able to do by virtue of an effective anti-trust law.

But is this law so effective that it will permit the Government, at some future date, to order the Cartel to sell the Bayer plant, to dispose of the Badische works "at a fair and reasonable price," and to put up at auction the Farbwerke vorm. Meister, Lucius & Bruning? We boldly ask, and with equal boldness answer: No—not in this incarnation!

The list of properties which the Eastman people are ordered to sell, when printed in detail, is a mighty formidable one, and brings eloquently home to the reader what the Government *can* do in its own bailiwick. It should be equally eloquent in bringing home to him what the Government *cannot* do abroad—and there is the answer to *that* particular bugaboo, if it ever existed. The textile industries as a whole are not blind to facts; those which have been most active in opposition to the Dye bill have simply made so much noise about it that their numbers have seemed greater. They are the victims of a delusion of German origin, pure and simple.

It would save, doubtless, a great deal of wear and tear to the nerves of Congress if an agreement could be reached before the Dye bill is again presented, but merely because the deluded ones have proved obdurate is

no reason for the dye industry to weakly abandon its just cause, nor for Congress to refuse consideration of it, because, quite irrespective of the rights of either of the two alleged "contending" interests, there are the rights of the American people as a whole to be considered. The situation is just as delightfully simple as it was before; there is a known majority of Congress favoring the bill, and there will always be the present smaller group of "irreconcilables." The thing to do is to allow the latter to speak so long as the law permits under the closure rule, and then—pass the bill, thereby putting the United States on a par with the other principal powers of the world.

The dye manufacturers have not abandoned the fight; there will be no "fight"—simply a formal rout, or execution. Much less have the dye manufacturers turned to the expedient suggested in this additional gem from the dispatch:

"The abandonment of the licensing

proposition as impracticable leaves the dye people in the position of having to fall back on the tariff as a means of protecting themselves against foreign aggression, especially from Germany. It is believed that very early after the reassembling of Congress, therefore, a plain statement will be made on the part of dye interests to the effect that they have decided to say no more for the present about licensing, and instead of that to ask for satisfactory tariff protection. Under the Revenue Act of 1916 various dyes are on the free list, but there is a dutiable list applying to the coal-tar colors running from 5 to 30 per cent. There are also duties on the specific basis running to $2\frac{1}{2}$ cents per pound to 5 cents. According to the information now before Congress, the present materials fall into three groups: Group 1 including the so-called 'crudes,' which are chemical substances naturally present in coal tar. The second group, dutiable at 15 per cent plus $2\frac{1}{2}$ cents per pound, includes intermediates, and the third group, dutiable at 30 per cent plus 5 cents per pound, includes the finished products, such as dyes, photographic chemicals, medicinal substances and the like. These duties are not believed to be satisfactory in view of the rapid extension of the coal-tar industry in Germany, the great development given to it during the war, and the competitive power which it is believed the Germans possess under existing conditions. There was considerable difference of opinion among the representatives who testified before Congress, causing a great deal of variation in the recommendations which they presented. It is believed, however, that some producers would prefer to have a flat specific rate per pound on the basic products rather than variable rates which depend upon the value of the mark for their actual protective power. The actual increase of rates which is requested by some manufacturers on various dye products or chemicals used in connection with them, is a

large one. The brief of the producers filed in January last merely asks for sufficient protection and anti-dumping provisions of adequate nature. Attempt is now to be made to frame a definite schedule.

"There has been a tendency in Congress to extend very generous treatment to the dye industry on the ground that it was really a war enterprise and that it ought to be fostered as an industry essential to national defense. The difficulty lies in the attitude of the consumers, especially textile men who have always been powerful with Congress and who feel that they themselves are facing very sharp competition from foreign countries and eventually from Germany as well as from England. They appear to be strongly organized in connection with the new Congress and it is believed that in spite of the favorable attitude toward the dye industry there may be difficulty in getting for it as much protection as it requests, though it seems to be sure of higher rates."

All of which a great and powerful newspaper prints under the bald heading: "Dye Men to Seek Tariff Duties."

Neither the officials of the dye companies nor the textile companies have lost their reason to that extent just yet. Without again repeating all the facts of the case, it may be stated that the adoption of such a course would be turning over American dye markets to the Cartel. Since it would not be to the advantage of either of these industries to have renewed German control, one may safely assume that the attitude of both is unchanged, and proceed to file the rumors in the foregoing report under their proper classification: Blunders inspired by German propaganda of singular clumsiness.

The Ribbon Works, Inc., Galveston, Texas, recently organized to manufacture ribbons for writing and adding machines, etc., will establish a chemical and dye works in connection with its

proposed new plant. Carbon-coating machinery for the manufacture of carbon papers, and other kindred equipment will be installed. J. D. Claitor is president and manager.

GERMAN DYE COMPETITION BEGINNING TO BE FELT IN FAR EAST

The dyestuff producers have reported that there are numerous export orders for colors in the market. Most of these, it is stated, come from the Far East, notably from China. Apparently the Germans have not been as active in this market as has been generally expected. Two months ago many of the producers stated that they believed that the end of the Chinese and Japanese markets for dyes had come. That is, they expected that the producers here would get but a small share of the markets in the future. This has so far been true to some extent of the Japanese market, but recent indications point to some demand from China for American supplies of colors.

Prior to the war Germany had control of the Chinese and Japanese markets, as she did of practically every other market for dyestuffs in the world. Both of these markets are extremely important. It has been believed by many factors that it would be impossible for the American producers to keep the hold upon the market which they won during the war. They pointed out that the Germans still had their trade-marks or "chops" which were well known to the Chinese buyers, and, further, that they would be able to place goods in the market at a fraction of the prices at which the American producers could sell, not alone on account of lower actual costs of the materials but also because of the extremely favorable rate of exchange in export transactions.

Thus far, however, the rate of shipment of American dyes to China has not decreased to any extent, export figures showing that the totals are

being pretty well maintained. Whether this is a temporary condition or not remains to be seen, although, according to the reports of travelers who have returned from China recently, the Germans have been active in that market for some months back. Shipments into Japan from Germany, however, have been considerably increased, while American exports to that country have been diminished during recent months.

GERMAN DYE INDUSTRY IS STRONG AND WELL OR- GANIZED, SAYS BRITISH ATTACHE

That the German chemical industry has survived the worst period after the war very well and is now consolidated, is the view of J. F. W. Thelwell, British Commercial Attache to the Embassy at Berlin, whose report has just been received in this country. Mr. Thelwell

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A. P. HOWES, President
LAURANCE T. CLARK, Editor

**ACT II, SCENE 1: THE POLICE
STATION**

The comedy which the German Government would have the world accept as a serious drama proceeds apace, with the plot thickening hourly and the side-splitting situations fairly crowding upon one another's heels. A bright spot in last week's news was a copyrighted dispatch from Rotterdam to the New York *Times* which stated that Dr. Heinrich Jordan, one of the four chemists formerly connected with the Bayer plant at Cologne, under contract to enter the employ of the Du Pont Company in the interests of the development of the dye industry in the United States, who had been detained in Holland on the demand of the German Government for extradition on a charge of theft of documents containing valuable formulae and business secrets, attempted to enter Belgium and was captured on Tuesday night, apparently at the instigation of a German detective.

Jordan has been released on parole pending the decision of the Netherlands Government on his extradition, and says he will fight the case as soon as ever he can get himself transported back again, and friends are of the opinion that he will be acquitted. At the same time it is declared that the Bayer people have so aroused feeling against him in Cologne that his return there would be dangerous.

This is all very amusing, but it is not without its significance for those who will read aright the vehemence of the German protests against permitting

an evidently capable dye chemist from seeking employment elsewhere. It is not Dr. Jordan's winning personality which has so endeared him to the German Government—gracious and charming though he may be—nor is it because the entire German dye industry would forthwith collapse as a result of his emigration. It is because the Germans will do anything and everything they can to prevent the American dye industry from gaining the smallest advantage, while they build their own up to greater strength against the time when they hope to come, unrestrained by anything save an inadequate tariff, back to their former position in the American markets.

Both sides of the controversy over the presence of German dye chemists in an American plant have received a thorough airing in these columns, and for this reason we wish to include among the testimony the statement issued by the Du Pont Company, signed by its president:

"The Du Pont Company has not violated any law or business principle, and these accusations made by the German Kartel are simply another move in its campaign to prevent the development of the dye industry here.

"In advance of any formal answer which may be made to the charges, it is only justice to the accused German chemists to say that the Du Pont Company employed Dr. Joseph Flachslander and Dr. Otto Runge as the best experts it could find to interpret and help put into practical operation the processes and formulae covered by the German patents which were seized and made available to American manufacturers when this country went to war with Germany.

"It has been demonstrated beyond question that in many cases the records filed with the Patent Office are incomplete, give misleading information and are otherwise so craftily devised that only a German chemist who has had experience in the production of the articles covered by the patents can put them to practical use. Dr. Flachslander and Dr. Runge were not employed to

bring over formulae and such other documents as are mentioned in the foreign dispatches.

"The American chemist has already solved from a laboratory standpoint so many of the problems involved in the manufacture of dyes that about all that is needed from Germany is the worker experienced in the manufacturing end of the business.

"The United States is the only dye producing country which has not yet taken steps to protect itself from a re-establishment of the German monopoly and to insure the building up of a home dye industry. So far, efforts to secure legislation which will help develop the American industry have failed and the new industry as soon as our technical state of war with Germany ends will be left open to Germany's fierce attack. It seems necessary therefore to go to unusual lengths to develop the industry quickly, and the employment of men who have had experience in the production of dyes certainly can help with this rapid development."

Surely no one could desire anything more frank and logical than this statement, and in the opinion of *The Reporter* it would seem to add the final word to the discussion. Just as the German dye industry will not stand or fall through Dr. Jordan, neither will the American dye industry stand or fall by the presence or absence of the German chemists.

But with reference to the basic principle involved, it is very well set forth by the Du Pont statement, in which the difference to-day between the German and American dye chemists is well brought out in a manner which reflects nothing but credit upon the latter, and not a slight nor a "humiliation" as the *New York Times* contended a month or two ago.

All in all, the American dye chemist has every reason to be proud of his accomplishments, and America has the right to be proud of him. The Government having up to now remained indifferent alike to the preservation or destruction of his accomplishments, he

cannot be blamed, in the state of uncertainty forced upon him, for seizing whatever substitute means seem to offer the best chances of saving intact the fruits of his labor, both for himself and for his countrymen.

GERMAN DYE INDUSTRY IS STRONG

(Continued on page 12.)

deals also with the controversial subject of Germany's available coal supply in his report, which reads as follows:

"It must always be borne in mind that a certain proportion of the present difficulties of German industry arise from bad coal distribution, from failure to transport, from bad commercial markets at home and abroad (in spite of the general shortage of goods nobody wants to carry large stocks now that prices are fluctuating as well as exchange), from lack of orders, seasonal depression, deficiency of raw material and other causes, but all are not due to insufficient coal supplies within the country as it is now the tendency to assume. While, therefore, Germany industry is not abundantly supplied with coal, it is far from being threatened with annihilation from lack of fuel. The difficulties, in any case, are only temporary and the coal situation as far as production is concerned is improving."

The most noticeable feature of the chemical industry has been the formation of numbers of combines. On this the report comments:

There can be no doubt but that the German chemical industry has survived the worst period after the war very well and has now consolidated. Conscious of its excellent organization and unique experience, it is now setting out to reconquer its old markets.

The total value of dyes imported from Germany into Great Britain during 1920 amounted to approximately \$30,984,344 and the total weight was 196,772 hundredweight. In the two pre-war years the value of this trade was approximately \$4,605,000 and the

weight was about 300,000 hundredweight per annum.

Production in the textile industry is still much less than it was before the war, but trade is in striking contrast with that in this country. From the beginning of August, after a period of stagnation, trade became lively and in a few weeks spinners and weavers had sold their 1902 production as well as a part of that for the first quarter of 1921. Prices fell 48 per cent between February and October, but they are again rising.

The state of trade is reflected in the returns of unemployment. On October 15, the date of the issue of the latest figures, the number of unemployed drawing doles was 374,982, a decline of 21,169 compared with the number on September 1, 1920.

Before the war, Germany was producing dyestuffs to the amount of 135,000 tons a year. Last year, 145,000 tons were produced, the largest output in the history of the industry. Even that increase pales in comparison with the output for the first two months of the current year, which totaled 28,000 tons, 15,000 of which were produced in February.

If the year goes through at this rate, the total for 1921 will approach 200,000 tons. Some forecasts set the figure still higher.

There can be no doubt that the German dye firms are crowding production. They are said to be in a most efficient state of organization and to have adequate capital. Cost of production, in view of the slack conditions in other industries, is reported to be even lower than in the pre-war period.

In so far as can be foretold, the early summer will find the German dye makers with enormous stocks and ready to flood all available markets with goods at extremely low prices. Their purpose of regaining control of the trade points to the old-time practice of underselling in all foreign fields. Already considerable footholds have been got in the Far East and South America. The home markets of Great Britain and America are the coveted prizes, and the

endeavor is the circumventing of restrictions now existing and the defeating of proposals for additional bars.

CHEMISTS' CLUB HONORS EIGHT

Honorary membership in the Chemists' Club was conferred upon four American and four foreign chemists last Thursday evening at a dinner commemorating the tenth anniversary of the opening of its present home at 52 East Forty-first Street.

The foreign chemists who received the honor were: Dr. Giacomo Giamician, professor of general chemistry at the University of Bologna, Italy; Dr. Henri Louis Le Chatelier, professor at the College de France and at L'Ecole des Mines; Dr. Ernest Solvay, of Brussels, Belgium, founder of the ammonia-soda process, and Sir Edward Thorpe, professor of chemistry emeritus of the Imperial College of Science and Technology, South Kensington, England.

The Americans were: Dr. John Uri Lloyd, of Cincinnati, former president of the American Pharmaceutical Association; Dr. William Henry Nichols, of New York, former president of the American Chemical Society, the Society of Chemical Industry and the Eighth International Congress of Applied Chemistry; Dr. Edgar Fahs Smith, of Philadelphia, president of the American Chemical Society and until recently provost of the University of Pennsylvania, and Dr. Edward Weston, of Newark, N. J., an inventor of electrical appliances.

NATIONAL BRINGS OUT ERIE FAST ORANGE CG

Under the above name, a new and interesting cotton dye has recently been brought out by the National Aniline & Chemical Company, Inc., and is a further confirmation that this, the first and largest dye-making concern in the United States, is alive to the needs of American dyers.

This new product is a much desired addition to the list of direct dyes made by this company, and it will undoubtedly prove of great value to cotton dyers on account of its general good properties.

"National" Erie Fast Orange CG is noted for its ready solubility, good fastness to light, washing and alkalis, while its resistance to perspiration and organic acids is excellent. It is a level dyeing color.

Dyers of wool and cotton, and silk and cotton mixed fabrics, will be unlimited in use of this new dye by rea-

In building for permanency, the use of zinc leaders, gutters, flashing, and shingles is likely to become equally as important in America as abroad. Zinc has been the universal roofing material in Europe for more than a century with a record of serviceability which extends over many years. Owing to its durability, zinc for leaders and gutters is extremely economical.

son of its property of not staining either silk or wool.

On account of its ready solubility and level dyeing properties, "National" Erie Fast Orange CG is particularly suited for dyeing light shades in a padding machine, and in this connection may be used either as a straight dye or for shading purposes.

The National Company will be pleased to supply samples and full technical information upon request to any of its offices.

JAPANESE GOVERNMENT HOLDS REPARATIONS COL- ORS; SELLS INTERME- DIATES

The import of dyes in Japan is now being reduced fast and the arrival of German reparation colors forms, though small, a notable item in the list of new stock, according to correspondence in the *Oil, Paint and Drug Reporter*. However, the past imports have accumulated and the visible stock in the market is pretty heavy, forming a factor to keep off the market's recovery.

All through the years of the war the speculative importation of chemical colors was maintained strongly. Even after the cessation of the war it was not given up. On the contrary it was maintained till summer, last, when the color trade in Japan was thrown into its worst condition. The stock thus accumulated consists of the qualities from the different countries, including Germany, Switzerland, the United States, England, France and other countries.

STOCK OF ARTIFICIAL DYES

According to a report just prepared by authorities, the whole visible stock of artificial dyes at this moment is up to 493,798 kin (kin equals 1.3228 pounds). The rough classification of the stock now held is:

	Kin
Aniline dyes	331,798
Alizarin dyes	31,000
Indigo pure	131,000

The prospect for the dye import trade depends on how this stock is being disposed of. In the opinion of prominent men in the line, it will be still considerable time before the stock is reduced to such an extent as to stimulate the import trade to fresh activity.

GERMAN COLORS HELD

The German reparation colors and pharmaceutical chemicals which have been arriving at Kobe since last summer are still held in that port's Government sheds. Part of the colors is now being sold by the Japanese Government. It is well known that the best part of the colors from Germany is indigo pure, but, according to an official announcement just made, only intermediates are now to be sold.

The repeated arrivals from Germany have been regarded as menaces to the dyestuff market here. Toward the close of 1920 accordingly some leading color merchants filed an application to the Japanese Government for the sale of the official holdings to them, stating that they would hold the stock sold until the dyestuff market was more stabilized. In reply to that application it was officially promised that the market would be fully consulted when the official stock was to be sold.

It was announced last month by the Minister of Finance that he would sell roughly eight tons of intermediates by auction in the middle of February to those manufacturers of dyes who use intermediates as their raw materials. The persons and firms who are desirous of buying part or whole of the in-

intermediates offered as required to give their names to the authorities in charge of the reparation dyes.

Evidently this step has been taken by the authorities after their full consideration of the market condition in Japan at this moment. Indigo pure which represents the bulk of the arrivals is still to be held in sheds, because its visible stock in the market is quite large. The sale in the market is also avoided to prevent a shock to the line which is in a condition of uneasiness still. In the opinion of the market the official sale, if repeated, will not prove any trouble to the market provided such caution is observed by the authorities.

The lots offered now are: Dianisidine, one ton; dianisidine base, 270 centigrams; paranitraniline, two tons; alpha-naphthylamine, two tons, and beta-naphthol, two tons.

BRITISH CHEMICAL PLANT MAKERS UNITE TO CO-OP- ERATE WITH CHEMICAL PRODUCERS

"The British Chemical Plant Manufacturers' Association" has just been formed. This association will co-operate with the Association of British Chemical Manufacturers and will endeavor, by interchange of information between the members, to improve the efficiency of British chemical plant and endeavor to promote the manufacture of chemicals in plant made in this country. The membership already includes twenty-two firms.

The development of this new association may prove of great service to the United Kingdom chemical industry generally. The major portion of chemical plant was, up to the commencement of the war, imported from Germany and the United States, and this was more particularly true of new developments which tended toward greater efficiency. In this latter class the Germans were foremost in applying improvements which were shown by years of experience to be of advantage. The new association has now in the United Kingdom a much larger field of operation for its manufactures than existed before the war, due chiefly to the new dye and fine chemical industries and the large extensions in the other chemical industries which took place as a result of the war. There is a promising future for the United Kingdom chemical plant manufacturers, provided that they can produce plant which is as good as, if not better than, the plant obtainable from other countries.

William F. Taubel, Inc., manufacturer of silk hosiery, Trenton, N. J., has resumed full time operations at the local mill, following a two weeks' shut down and several weeks of reduced time. The plant is giving employment to close to its full working force of 1,000 operatives, with capacity at approximately the normal output of 12,000 dozen pairs of hose per day.

DYEING RAW SILK

A process has recently been patented for dyeing single thread raw silk in the skein. The inventor claims that the gum is kept from dissolving until after the dyeing process is completed. The silk is subjected to a sulphuric or muriatic acid bath, the temperature depending on the color desired.

After the silk has been subjected to the gum preserving or hardening step, it is subjected to the action of a solution of alum, chrome-acetate, of nitrate of iron, or any iron-liquor used in dyeing, depending upon the color used in dyeing. The action of these mordanting or fixing agents is to harden the gum, producing an insulation around each thread, which protects the hardened gum on the threads against the action of the alkali or acid present in the dyeing solution.

The threads which have been treated as above described will be pliable but firm and can be worked for a considerable length of time in the dyeing solution without affecting the ceraceous matter in the gum present in the silk.

After this operation has been completed, the silk may be dyed in the usual manner. The dye employed must have an affinity for the particular hardening fluid or preservative employed to produce the insulation hereinbefore set forth.

When the raw silk has been dried and after the dyeing operation, it will be ready for weaving. After the weaving operation has been performed, the fabric will be boiled in a strong solution of soap and water, which will eliminate the gum or ceraceous matter and bring out the color and luster in the fabric.

The ceraceous matter or gum in the raw silk is thus preserved until after the dyeing and weaving operations, the removal of the gum being the final operation. The retention of the gum results in keeping each thread, and hence they can be readily separated when they are to be woven or thrown. The dyeing operation is not hampered by the presence of the gum, as the dye will penetrate the gum, but will not soften or dissolve it, owing to the hardening process described. As the dye will pene-

trate and pass through the gum, the silk fiber will be affected or dyed thereby.

One of the advantages of the improved process is that the threads comprising a hank of silk can be treated in untwisted condition in hanks or warps, the natural gum being preserved or hardened in each thread composing the hank, thus enabling the storage of the hanks for dyeing at a future time. Silk threads can be preserved for a considerable length of time by subjecting same to the hardening step of my improved process. The dyeing operation does not necessarily have to immediately follow the hardening or insulation of the gum in or on the silk threads.—*Canadian Dyer & Color User*.

FIXATION OF BASIC COLORS ON TANNIN BY STEAMING WITHOUT TARTAR EMETIC

By A. STIEGLER

A paste consisting of 30 grms. basic dye, 100 grms. lactic acid, 500 grms. tragacanth thickening, 180 grms. of 1:1 aqueous tannin solution, 20 grms. lead acetate, and 170 cc. water is printed, steamed for one hour, rinsed, soaped and bleached. In preparing the paste the lead acetate solution is added last and the lactic acid prevents the formation of the lead lake until the material is steamed. The lead lakes are as fast to soap and light as the antimony lakes and are appreciably deeper in shade than the latter, whilst retaining equal purity and brightness. Lead acetate may be replaced by zinc acetate, but the lakes of the latter are less fast to soap and chlorine. C. Sunder reports that the process is applicable to naphthol prepared cloth as well as unmordanted material, and is to be recommended from the point of view of economy, but as the lead lakes are sensitive to sulphuretted hydrogen, bright shades are preferably fixed with antimony salts.—Sealed Note No. 2035, *Bull. de la Soc. Ind. Mulhouse*, in *Jnl. S. D. C.*

Lissberger Brothers, Somerville, N. J., have leased the plant of the Morris County Chemical Company, Bloomington,

dale, N. J., and will use the works for the manufacture of chemicals and dyes. An experimental department will be operated particularly for dye work. The company also operates the New Jersey Tube Company, the Eagle Smelting & Refining Works and the Somerville Iron Works, Somerville.

Announcement has been made at the local mills of the American Thread Company, Holyoke, Mass., that it is expected to materially increase the hours of operation at the plant in the near future. The mills have been running two days a week for some time.

FOREIGN TRADE OPPORTUNITIES

Names and addresses of any of the firms mentioned below may be obtained by direct application to the U. S. Bureau of Foreign and Domestic Commerce, which compiled the list, or any of its district and co-operative offices. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers. Applications for particulars should refer to opportunity numbers; and in case information is desired regarding more than one, inquiries should be made on separate sheets.

34551—A firm of importers in England desires to be placed in communication with manufacturers of toys, dry goods, and *textiles*. No references offered.

—o—

34524—A firm of purchasing agents in Canada desires to secure an agency on a commission basis for the sales of *serges, worsteds, woolen goods, cotton piece goods, and silk goods*. References.

34526—A commercial agent in Canada desires to secure an agency for the sale of iron and steel goods, chains, *heavy chemicals*, and paper-mill supplies. References.

—o—

34458—An import company in India desires to secure the representation of firms for the sale in that country of *cotton and woolen goods*. No reference offered.

—o—

34494—A merchant in France desires to secure an agency for the sale of food products, dry goods, *silks, calicoes and cloth for linings*. Correspondence should be in French. Reference.

—o—

34502—A firm of commercial representatives in France desires to secure an agency for the sale of *coal-tar dyestuff intermediates* such as *benzoin, benzol, toluene, naphthalene, anthracene*, and *phenic acid*; and also chemical products in general. Quotations should be given c. i. f. French port.

—o—

34495—An agency is desired by a firm in the Netherlands for the sale of *all technical chemicals*, cereals, pork products, lard, corned beef, and condensed milk. Quotations should be given c. i. f. Netherland port. Terms: Payment against documents on arrival of goods. References.

—o—

34462—The American representative of a firm of commission agents in Argentina desires to secure the agency of exporters or manufacturers of *cotton yarn and textiles* for the sale direct to Argentine mills and importers. The representative to remain in the United States for the purpose of lending his

assistance to the exporters. No reference offered.

—o—

34536—A commercial agent in Egypt desires to secure an agency, from manufacturers only, for the sale of *hosiery silk, cotton lisle, mercerized and artificial silk hosiery* for men, women and children. Quotations should be given c. i. f. Egyptian port, if possible, or f. o. b. New York. Terms: Cash against documents. References.

—o—

34450—A factory in Argentina using as much as 280,000 pounds of cotton yarn per month desires to get in touch with American cotton mills that will export *cotton yarn neatly tied up in ten-pound bundles*, each wrapped separately in cartridge paper, all pressed tightly in bales, covered with burlap, and securely bound with steel, so as to insure safe delivery in Argentine port.

Dye-a-Grams

With Jimmy Cox in Europe, it's quite evident the Democrats knew they would not need any leader to show them the way out.

—o—

The reason the last Congress didn't pass the Dye bill was, perhaps, because they were too busy distributing the \$400,000 worth of 'garden seeds'!

—o—

EFFICIENCY ENGINEERS CLASSED AS ARTISTS—*headline*. From our experience with textile efficiency engineers, we'd say, offhand,

they're about as artistic as an ordinary house painter.

—o—

Harding's troubles are mostly bequests of the Wilson Administration!

—o—

Which only goes to signify that some people make their own troubles and others have them thrust upon them!

—o—

We have known of mills where the water was so muddy during Spring freshets that it was no trouble for the dyer to color "Sand" shades!

—o—

Mr. Webster, whom we recently referred to in this column, now thinks we should have given him credit for the ability to "author" a Dyestuffs Encyclopedia! Granted, *cum grano salis*!

—o—

Evidently Germany didn't like the idea of toeing so many Marks!

—o—

Dollar Watch Adv.: "A new lot just received. Last lot went very fast." They generally do—or slow!

—o—

WOOLEN SKIRT MATERIALS TO BE MADE THINNER—*headline*. While complexions, we presume, will be just as thick as ever.

—o—

Revised: "Take care of the pennies and income tax collectors will take care of the dollars!"

—o—

The Fordney Bill was the last casualty of the Wilson Administration! (*Pro bono publico?*)

—o—

All the Fords don't advertise like Henry, which is perhaps the reason they're not as well known.

G. E. T.

W. E. Weinz, until now connected with the Boston office of the Grasselli Chemical Company, assumed his new duties as manager of the dyestuff department of the Chicago office for this company on March 1, taking the place of C. Propach. Mr. Weinz has a wide knowledge of dyestuffs, both foreign as well as domestic, having entered this field some ten years ago.



AMERICAN DYESTUFF REPORTER

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"Circulated Everywhere Dyestuffs Are Used"

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SCIENCE AND DISARMAMENT

Present-Day Political Habits of Thought in America Have Not Altered to Meet Changed Conditions in the Military World, Leaving Germany Armed and the U. S. Soon to Be Helpless

"**N**OW, the gist of my case is this: That the civilization of the past three centuries has produced a great store of scientific knowledge, and that this scientific knowledge has altered the material scale of human affairs and enormously enlarged the physical range of human activities, but that there has been no adequate adjustment of men's political ideas to the new conditions."

So closely does the above fit the present relations of the American dye industry with Congress that, unless it were for the presence of the time factor alone, one might almost imagine it to have been penned as part of a denunciation of our Solons for their criminal laxity in failing many months ago to put America on an equal footing with the most powerful of her potential rivals and trade competitors, particularly Germany.

However, the words happen to be those of no less a literary craftsman than H. G. Wells, writing in the current issue of the "Saturday Evening

Post" on "The Salvaging of Civilization"—which our readers, incidentally, are advised to buy and consider—and, as a matter of fact, Mr. Wells intended his remarks to have a far wider application. He was preparing to talk specifically about the world effect of the tremendous progress which has been made in transport facilities.

Yet the distinguished British novelist's thought serves well to introduce the leading thought in this week's sermonette, which is that the World War produced such a gigantic stride in military science that the rank and file have not yet been able to readjust their outlook to embrace more than a small part of it. Fortunately for England, France and Japan, the governments of these countries have managed to see the light and take action in keeping with the altered and enormously complicated conditions which prevail to-day in the military world—or, if perchance they have not fully comprehended in every case, they have at least been

wise enough to follow expert advice. But in America this has not been so.

It is true that the governments of England and France were really in closer contact with the war, and for a much longer period, than was the Government of the United States, and hence ought to have had the lesson better driven home. But Japan, which was not in the war at all, sensed the change, and America had every possible opportunity to observe and think about the significance of the new chemical warfare. Moreover, our government has had quite as competent advice as any other power. There is no shadow of an excuse for its infantile innocence. Throughout almost the whole of the past two years it has presented the spectacle of a prattling babe, playing happily with a string of beads, all unconscious that it is straying nearer and nearer to the edge of a precipice. Or, if you like, that of a good-natured simpleton, grinning foolishly at a snarling Bengal tiger which has just stepped out through a broken bar in its cage. The sight has been deeply humiliating at home and, make no doubt of it, the subject of some secret mirth abroad, particularly in Germany.

Mr. Wells declares that the sudden great extension of man's range of fast travel and communication brought about by the railroad and the telegraph, caused the European countries, whose boundaries in a majority of cases had hitherto been determined by the limit of effective central control based on travel by coach and courier, all at once to become dangerously crowded. In precisely the same fashion has the chemical knowledge of the past decade or two grown more rapidly than the ability of American business to assimilate and make use of all of it, until with the final vast expansion resulting from the war it has attained a magnitude which places it completely beyond the scope of most business minds—and many military minds as well—of today.

The business mind failing to grasp

it because of the time required for education, the governmental mind, apparently, has been equally incapable. That is the only explanation of our Senators' persistence in viewing the Dye bill from the standpoint of political expediency. And it is merely an explanation—not an excuse. Those men were elected to office simply that they might devote their whole time to the study of national and international affairs, to secure competent advice from qualified authorities, and to take the lead in matters of that kind.

Instead of that, no matter how well each individual Senator may *privately* be aware of what is necessary, he is seemingly too great a political coward to become *publicly* aware of it until the truth has seeped more fully into the public consciousness. Let impartial and unbiased experts din it into his ears as they will, he must not risk running counter to possible adverse public opinion, knowing full well all the time that the public will be heartily with him *when it learns*, and that by daring to be a man instead of a mouse he can gain honor for himself. Thus is the expansion of chemical knowledge of a most vital character grievously cramped and restricted in this country by existing political *habits of thought*. Like the European boundaries in the Wells article, these habits of thought were satisfactory enough until the advent of increased scientific knowledge, upon which they became a "frightful nuisance."

Habits of thought are sometimes harder to get rid of even than international boundaries, and it may be that an immediate and widespread campaign to educate the public, on a scale not previously attempted, will prove the only solution. Such a course, at all events, was strongly advocated last week by Dr. Marston Taylor Bogert, of Columbia University, during the course of an address—under the heading which forms the title of this article—delivered at the

meeting of the Delaware Section of the American Chemical Society.

Dr. Bogert declared that in order to cope successfully with a nation having such skill in chemistry as has Germany it would be necessary to have in this country a well-developed Chemical Warfare Service. He was of the opinion that chemical warfare was yet in its infancy, and that after it had run its course the military art might also invoke medical and biological warfare, which could be accomplished by the dissemination of germs and disease. He therefore maintained that the military efficiency of the future would depend in large measure upon science.

"Most fundamental of all, however," he continued, "for all else rests upon it, is an intelligent grasp by our people and Government of what is an immensely powerful factor. That is, the scientific development which makes for the progress of civilization and upon which, to a vast extent, the safety of the country is dependent. Without such a general understanding it will be difficult or impossible to awaken our fellow countrymen to the menace of our unpreparedness in such matters, so as to secure that widespread education and individual proficiency in science which is our safeguard. With it there will be no difficulty whatsoever in getting Congress to enact such legislation as will foster and stimulate not only our synthetic dye and nitrogen industries but also our Chemical Warfare and Air Services. Such action will have an immediate and far-reaching beneficial effect upon the entire course of our development in science, at a time when the world is looking to us for a lead in such matters."

Dr. Bogert was emphatic in declaring that German chemical science, unless speedily checkmated by the intelligence of other nations, would continue to be a menace to the world, and that disarmament, both for Germany and the Allies, must provide for the definite reduction and control of the coal supply, of the fixation of at-

mospheric nitrogen, which is the mother substance of all explosives, and also the reduction of the synthetic dye plants which are the sources of all poison gases and the actual manufacturers of most of the explosives used in war.

"Exports of all such substances," continued Dr. Bogert, "should be carefully regulated, for export trade is the familiar excuse for the maintenance and expansion of colossal plants of latent war possibilities. The same armament commission might be very keen for the dismantling of the Krupp establishment at Essen, and yet not bat an eye over the continuance and expansion of mammoth arsenals, camouflaged as dye factories or agricultural chemical works, although the actual military damage inflicted upon Germany might be much greater were the dye and nitrogen factories destroyed than if the Essen plant were razed.

"For example," asserted Dr. Bogert, "if the Allies fail to reduce di-

rectly the present German supremacy in synthetic dye and nitrogen fixation plants there will be no safety for this country until we have a development of those vital industries here superior to that of Germany."

The Columbia scientist took exception to the view of General March, Chief of Staff of the United States Army, who in opposing the extension of the Chemical Warfare Service said that he would prevent those substances used in the manufacture of poison gas from being imported into Germany, and thus keep down the poison-gas output. The speaker said that from such simple substances as salt, coke or charcoal and air could be manufactured phosgene and chlorine.

"All that is necessary, therefore," observed Dr. Bogert ironically, "is to remove from Germany all the salt underground or close the salt mines, and to exclude Germany from access to the ocean; to place a similar ban upon the sulphur mines and the smelting of sulphur ores; to interdict the raising of sugar beets and other sacchariferous crops, and to cut down all the forests—since cellulose, which is obtained from these sources, can be converted into alcohol. As all modern warfare depends upon nitric acid, and as nitric acid is now being made from the nitrogen of the air, it is equally clear that this manufacture can be easily and completely stopped by also excluding the atmosphere from Germany. Except for these slight objections, the plan is doubtless an admirable one."

If even General March, then, is so far from being thoroughly up to date on military matters, what is to be expected of the public! For the public there is plenty of excuse; for the government which has failed to insure our lasting peace, none whatever. Our alleged "servants" have had the means of finding out these things. They have had the best advice in the country on tap whenever they cared to utilize it—but they have never cared to! What more is wanted, or obtainable?

Out of it all again comes the clear fact of the stultifying influence of present-day political habits of thought, aided and abetted by a strongly organized and efficient lobby which seems to be able to frighten Congress half out of its sadly muddled wits.

If the Allies decide to subject Germany to REAL disarmament, by assuming control over the plants which are potential sources of modern munitions of war—which they would be perfectly justified in doing under the terms of the Treaty of Versailles—well and good; we shall need the dye industry anyway. But we have not even a good, strong hope that this will be done. And until it is done, and England, France and Japan are similarly limited in power, why should America assume the role of a succulent oyster, with shell ajar, waiting to be picked clean by the first predatory fish that comes along?

These powers all have a mighty respect for us, but it will not be well to travel on the theory that this respect arises solely from love of our appearance, customs and altruism. They demonstrated only too plainly at the Peace Conference just how much consideration they had for smaller nations, unable to deal out, in return for an insult, what devotees of the prize-ring know as a "lusty wallop."

No, the key to their continued respect lies in a self-contained dye industry, which can only be purchased at the very reasonable price of a licensing law such as is provided for in the Dye bill. And in their secret minds, none of these powers would like to see us pass such a bill—particularly Germany!

H. W. Jordon, chemical engineer for the Smet-Solvay Chemical Company, addressed the Cincinnati Section of the American Chemical Society at its 241st meeting, at the University of Cincinnati on "The Solvay Chemical Industries; Their Work in War and Peace." The lecture was illustrated with lantern slides.

U. S. SELLS \$943,595 IN ANILINE DYES ABROAD DURING JANUARY

Exports of dyes and dyestuffs from the United States during January were valued at \$1,345,531, according to the U. S. Bureau of Foreign and Domestic Commerce. The majority of these exports were aniline dyes, these being valued at \$943,595, of which China received \$262,954 worth, more than any other country. England imported American aniline dyes to the extent of \$148,699, and \$108,026 went to British India.

Exports of logwood extracts were valued at \$42,822, and "all other" dyestuffs and dyes not specified were exported to the extent of \$349,114. Of the last-named class, British India is the largest importing country, paying \$203,374 for them.

The table shows the quantity and value of the January dye exports by countries:

Countries	Aniline Dyes	Logw'd Extract	All Other
Belgium	\$25,184	....	....
Finland	2,755	....	....
France	42,054	\$27,730	\$11
Germany .....	....	1,500	....
Greece	2,797	....	....
Italy	20,319	1,758	....
Netherlands	99	610	220
Roumania	105	....	....
Spain	13,972	....	6,249
Sweden .....	....	....	1,197
Turkey in Europe	2,943	....	100
England	148,699	5,361	1,266
Canada	24,979	515	21,919
Costa Rica	344	102	474

Guatemala	510	14	97
Honduras .....	....	....	15
Nicaragua .....	....	....	54
Panama	228	....	91
Salvador	1,443	96	....
Mexico	46,367	282	74,042
Newfoundland and Labrador .	....	....	813
Jamaica .....	....	....	36
Trinidad and Tobago .....	....	....	19
Cuba	3,479	20	9,466
Azores and Maderia Is. ...	129	....	....
Virgin Islands ..	....	....	15
Haiti .....	....	....	7
Dominican Rep. .	....	....	304
Argentina	20,179	....	315
Brazil	86,734	....	2,622
Chile	8,297	....	795
Colombia	4,318	....	1,369
Ecuador	3,942	52	364
British Guiana ..	....	....	4
Peru	5,186	210	....
Uruguay	650	....	....
Venezuela	895	862	508
China	262,954	140	203,374
British India ...	108,026	40	5,842
Other British East Indies ..	2	....	....
Dutch E. Indies. .	135	....	....
Fr. Indo China..	1,950	....	....
Hongkong	23,736	....	....
Japan	19,425	....	5,981
Siam	315	....	....
Turkey in Asia..	2,170	....	....
Australia	41,092	3,530	602
New Zealand ...	805	....	2,610
Philippine Is. .	6,447	1,115
Br. So. Africa...	4,540	7,218
French Africa ..	4,515
Egypt	876
	<hr/> 943,595	<hr/> 42,822	<hr/> 349,114

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Pointed solely toward the welfare and growth of the American Dyestuff Industry. Unbiased contributions appreciated.

A. P. HOWES, President

LAURANCE T. CLARK, Editor

A LOST OPPORTUNITY

A not altogether unsprightly witticism, current some months ago, consisted in the joker blithely asking the jokee if he had heard of the most deadly poison in the world. The hoped-for negative answer would bring forth the response, to the accompaniment of sundry chuckles and snickers:

"Airplane dope—one drop will kill you!"

Curiously enough, this quip has become almost literally a grim fact of deepest significance to the United States. Our Chemical Warfare Service, in the course of a campaign to educate members of Congress, Government officials, other branches of the army, and the American public in the importance and value of chemistry and chemicals as means and methods of warfare, has let it be known that it has discovered a liquid gas poison so strong that three drops will kill any person whose skin it touches. The name and nature of this substance is intended to be kept a secret by the service, but it has taken steps to develop defensive measures against this new poison, in case the secret should be discovered by a possible enemy of America.

The method of distributing the new poison developed by the American army chemical experts is through nozzles attached to airplanes. The substance is slow to volatilize, it is stated, and will reach the ground before it does so. It requires from two to three days to ten days or two weeks to complete the volatilization process; meanwhile it continues its deadly work. By this means,

it is claimed, airplanes sailing over battleships, coast fortifications or armies encamped or fighting, can rain down death upon man and beast below them. It is said that minute quantities that might be caught in the crevices about a ship would render it uninhabitable for days. By repeating the spraying process every week or so, it is said, hostile airplanes could keep American fortifications out of commission continuously. Insular and other outlying possessions of this country are said to be peculiarly vulnerable to this annihilating form of attack.

In a recent statement the Chemical War Service says:

"One plane carrying two tons of the liquid could cover an area 100 feet wide by seven miles long and could deposit enough material to kill every man in that area by action on his skin. If those on the ground outside such area were not protected by gas masks the fatalities would extend for considerable distances.

"It would be entirely possible for this country to manufacture several thousand tons of material a day provided the necessary plants had been built. The quantity is limited in practice by the amount of electric power that is available, but the power resources of this country are very large. Electric power is necessary for making chlorine, which is a sort of basis for poison gases. This country as well as many others has unlimited supply of the necessary raw materials for substances like the new poison gas-liquid.

"If Germany had had 4,000 tons of this substance and 300 or 400 airplanes equipped to distribute it properly, the entire American first army could have been annihilated in ten or twelve hours. This army consisted of 1,250,000 men during the Argonne offensive in the late war, and occupied an area about forty kilometers long by twenty kilometers wide."

It is declared that the new American poison is somewhat like mustard gas in its propensity to volatilize slowly. Protective clothing is being developed by the Chemical Warfare Service, accord-

ing to General Fries, which entirely envelops the soldier and renders him immune to the deadly liquid. This is the only way to protect a man, the general says.

Officers of the Chemical Warfare Service feel encouraged with developments since the change in administration at the War Department. The army is becoming educated, it is said, and Secretary of War Weeks is reported to have stated that he is especially very much interested in the Chemical Warfare Service and the air service. Former Secretary of War Baker and some officials of the department and certain high officers of the army have been charged with being indifferent if not antagonistic toward chemical warfare. However that may be, one thing is certain: That single item of news appeared in all the daily papers and as a result of being published just once is by this time more firmly implanted in the public mind than any of the facts

about American dyes, or the direct relationship of the dye industry to the C. W. S.—despite the untiring efforts of those who have sought to educate our press. The explanation is simple and obvious, the subject being highly dramatic and therefore easily visualized.

The role of the dye industry is inherently quite as dramatic, but whereas the former dramatizes itself, the latter wants dramatizing—if we are to secure the necessary public interest. The task of effectively adapting the dramatic features of the dye industry for the public stage is a difficult one, and as yet no chemical Shakespeare has arisen to catch the popular interest, wholesale.

Coupled with the release of a fact like our new poison, however, it could easily ride along on the other's ability to compel attention. For the new fact is not the end; such forces are in a constant state of change and improvement. Another power might discover some-

thing else just as deadly to-morrow, for which a counter would have to be devised. By the time the next war comes, both might be abandoned for a newer agent, and constant research is necessary to keep abreast of things.

Keeping abreast is the surest way of *preventing* the next war, and securing the facilities has become a question of first capturing the public sympathy. It would seem as though a great opportunity for doing so was lost when, in announcing its discovery, the C. W. S. did not make it plain that continued effectiveness of that discovery depends on holding the dye industry.

RHINELAND COMMISSION RETAINS DUTIES ON GERMAN DYE EXPORTS

Existing high rates of export duty will remain effective on shipments of dyestuffs from the occupied territory in Germany, into the remainder of Germany, it is said by the U. S. State Department, basing the declaration on information received as to the policy of the Inter-Allied High Commission in the matter of customs duties in the Rhineland. The purpose of maintaining high export duties on dyestuffs, it is said at the department, is to discourage attempts to restore the German dyestuff monopoly.

Export duties on other articles from the Rhineland are to be reduced to a nominal figure and tariffs on imports into the Rhineland are to be materially reduced in order to encourage industry and production, according to information received at the State Department, which says:

"The Interallied High Commission in the Rhineland contemplates material reductions in the tariffs on imports over the western frontier of the Rhineland in order to encourage industry and production, according to advices reaching the State Department to-day.

"On the eastern frontiers of the Rhineland it is the intention of the Rhineland High Commission to establish a nominal export tariff upon all exports except dyestuffs. This nominal

tariff is designed by the High Commission to serve chiefly statistical purposes. The tariff on imports over the eastern frontier of the Rhineland will continue, with the exception of foodstuffs, which are to be passed free of duty.

"The allied military authorities, according to the department's advices, have at present no oversight or charge of the customs and customs collections, and all moneys are "held and carried to special account" until arrangements are made to turn them over to the Reparations Commission.

"German customs officials are still in charge of the collection of customs, under the control of the Rhineland High Commission, and the old tariff rates continue for the present."

"CUT COSTS BY INCREASED EFFICIENCY," BRITISH DYERS ARE TOLD

Chairman of Bradford Organization Would Not Favor Wage Reduction

At the recent meeting of the Bradford Dyers' Association, Ltd., the chairman of the board of directors declared increased efficiency to be the only practical means of reducing costs. He said:

"It is beyond all question that our high costs of production are an almost insuperable bar in the way of any general great revival in industry and commerce. Markets are closed to us by reason of the high prices we are asking, and until we recover our ability to offer goods at prices which the markets can pay it is vain to expect a great revival in demand. There is nothing facing the industrial community to-day in any way comparable in importance with that of securing in the shortest possible time such a reduction in the costs of production as will set business moving again. Bearing on this, I may tell you that, while our costs of production exhibit no reduction, we nevertheless have a full appreciation of our obligations to take our share with the rest of the trade

in restoring more normal conditions in order to set industry going again, and so alleviate the distress which has arisen from unemployment. By what means, then, may we hope to reduce the costs of production to a point which will enable us to offer goods at such prices as the world can pay? So far as I am able to see there are three ways only:

"1. By a reduction in profits.

"2. By a reduction in wages.

"3. By a greatly increased efficiency of production, with a consequent lessening of its cost.

"In regard to the first, this in most business has already come about. Indeed, in the textile trade it may be said with certainty that losses rather than profits are the order of the day.

"In regard to wages, for my part I shall be extremely sorry to see any reduction in wages, except such as can be made without affecting their purchasing power, as I am convinced it would not be an advantage to the country to have the relative position of the workers disturbed so far as the cost of living is concerned. With a fall in the cost of living, however, a corresponding reduction in wages cannot fairly be resisted, but I am speaking immediately at such length on the relationships between capital and labor that I must ask you to take what I have just said in conjunction with what follows.

"To come to the third method—namely, 'by a greatly increased efficiency'—that, in the opinion of your directors, is the way of salvation."

The Merrimac Chemical Company has declared a quarterly dividend of \$1.25 a share, payable March 31.

GERMAN DYE TRUST TENTACLES GROPING

Color Cartel Reaching Out Toward France, Italy and England

An interesting development in connection with the activities of the German chemical cartel has been brought to the attention of American officials in a confidential report recently received. It appears that Herr von Weinberg has made an arrangement with one of the Italian dyes works by which it is agreed to furnish intermediates so that the Italian company can eventually supply Italian dyestuff needs.

"This perhaps is not nearly so surprising," says the "Journal of Industrial and Engineering Chemistry," "as is the report that Mr. Frossard, acting for the Compagnie Nationale des Matieres Colorantes en France, has made a similar agreement with Herr von Weinberg and the profits of the French company are to be divided equally with the Germans. The French concern, however, is not to extend its market beyond France. It seems that neither France nor Italy would need very much dyes from the reparation commission under this scheme.

"The rushing of German dyes into Great Britain in order to beat the effective date of the new British dyestuffs licensing bill is shown in figures which have recently been received here. Importation of German dyes, including those obtained through the reparations commission, had increased until by December they amounted to 1,430 tons per month. Imports of German dyes into Great

Britain for the month of November, it is said, amounted to £2,000,000, or about 1,400 tons. It is added that the Germans apparently have steadily increased shipment of dyes to England during the last year and apparently have endeavored to get a fairly large stock of German dyes into England before they were stopped by the legislation England put on its statute books to protect its industry."

"DYES AND DEFENSE"

Leaders of thought connected with the press of this country at last seem to be getting at the heart of the American dye situation, and to be acquiring the proper language for an effective protest. The *New York Times* was one of the first to see the light, and now comes the *Wall Street Journal* with as completely stated and satisfying an editorial under the above heading as could be wished. In reprinting it to show the progress of our daily press The REPORTER calls attention to the fact that the newspaper quoted was always in favor of saving the American dye industry for Americans, as were many others. The great improvement of vision is evidenced by the fact that a few months ago this newspaper would have said "Put a high tariff on dyes"—and let it go at that! Thanks to such institutions as the American Chemical Society's efficient News Service, however, observe now an enlightened helper of the cause:

Out of the great mass of needful things left undone by the last Congress, one in particular stands out like a danger signal. This is the Longworth bill relating to the importation of dyestuffs. Our national defense may well depend upon it. It may mean as much, and perhaps more, to our national defense as the appropriations for the navy. It was held up in the Senate by a mere handful of members.

A few months ago a British officer called attention to the fact that so long as Germany was permitted to maintain its monopoly of dyemaking, disarming her was futile. A dye plant can close

at night and resume the next morning as an explosive and poison gas factory. Whether we like it or not, chemical warfare is here to stay, and Germany has such an enormous advantage in this direction that she could laugh at the Allies if the Krupp works were razed to the ground.

Other advanced thinkers have from time to time called attention to the danger. Now, Joseph H. Choate, who during the war was detailed by the Alien Property Custodian to study the dye question, has added a contribution. The Tariff Commission also has published such full information that all who wish to know can easily learn the facts.

We have the technical skill but not the experience necessary in this most complex industry. As Mr. Choate says, it is not in the books and cannot get there. It comes only by years of experience to the workmen, to whom even a difference in the bubbles in a vat has a meaning. The Tariff Commission report shows we are supplied with crude materials. The technical skill and capital also are here, but Germany possesses a monopoly of trained, inherited and acquired experience.

The purpose of the Longworth bill was to protect the American dye trade while acquiring this experience. Tariffs will not accomplish this, for Germany, planning for the future, would surmount any tariff levy in order to supply our market, to keep us from building up an industry on which our future defense may rest. England and France have sensed the situation and will not permit any German dyes to be imported if such dyes are manufactured at home.

The fact that \$3,000,000,000 of our industrial production depends upon the dye trade is of itself worth considering. But even this is small compared with national defense. We must reconcile ourselves to the fact that the Great War did not end war. Germany possesses the most destructive chemical armament in the world. Filibustering against such a measure as the Longworth bill is on a par with razing our arsenals and destroying our navy yards.

NO WAGE INCREASE FOR BRITISH DYERS

The wage advance asked for by British dyers has been rejected by J. A. Compston, K. C., chairman and umpire in the recent case for arbitration between the National Society of Dyers, Finishers and Textile Workers and the Allied Association of Bleachers, Dyers, Printers and Finishers. The arbitrators failed to agree. Mr. Compston declared that having regard to the protection afforded to the workmen in regard to the increased cost of living by the sliding scale, they have not made out a case for an advance on current rates nor for a present minimum rate of £5 for 48 hours for adult males or £3 for adult females. Piece workers are entitled to 25 per cent higher earnings over day workers. Consideration cannot be given to an agreement for a shorter working week, with a view to limiting the hours to forty-eight, without at the same time entering into the larger question of unemployment and underemployment, which was not referred to the arbitrators.

THE USE OF GLUCOSE AS A DISCHARGE FOR INDIGO BLUE

A. SCHEUNERT AND N. WOSNESSENSKY

A paste containing 300 grms. glucose and 700 grms. thickening, to which 100 grms. zinc oxide and 50 grms. Formosul W may be added, is printed on the indigo-dyed fabric. The printed material is passed through a caustic soda bath, sp. gr. 1.26, at 100-110 deg. Cent., and then into boiling water, although improved results are obtained by a short steaming prior to the alkaline bath. Colored effects are obtained by the incorporation in the discharge of coloring matters, such as the Indanthrenes, Cibanonnes, or Algol colors, which are unaffected by caustic soda or boiling water, in which case a paste containing 250 grms. coloring matter in paste, 300 grms. glucose, and 450 grms. thickening is used. (*Sealed Note No. 1990, April 6, 1910.*)

Colored effects may also be produced by the addition of diazo compounds to

the glucose discharge, thus indigo-dyed material is padded in beta-naphthol and printed with 250 grms. glucose, 150 grms. of a diazo solution prepared from alpha-naphthylamine, chloroanisidine, or benzidine, 50 grms. Formosul W, and 600 grms. thickening. The printed material is treated as before. (*Sealed Note No. 1994, April 222, 1910.*)

The base Azo Rose BBI (MLB), when diazotized, can be used for the production of a fine red discharge on indigo-dyed cloth, padded with beta-naphthol by printing a paste consisting of 250 grms. of a diazo solution of 20 grms. Azo Rose BBI, 200 grms. glucose, 500 grms. British gum, and 50 grms. Formosul W. (*Sealed Note No. 2019, July 20, 1910.*) By the addition of 50 grms. stannous chloride per kilo of the paste described in *Sealed Note No. 1990*, the following advantages are obtained: The quantity of glucose may be reduced by 100-200 grms., the shades produced by a colored discharge are richer and more brilliant, and the concentration of the caustic soda bath may be reduced to a sp. gr. 1.6-1.21. (*Sealed Note No. 2075, March 15, 1911.*)

M. Battagay reports that trials of these processes have given perfect results. The process differs from Ger. Pat. No. 214,715, in that the authors of *Sealed Notes* separate the glucose from the caustic soda, which is a considerable improvement, resulting in more stable printing mixture and the production of colored discharges. The passage of the printed material through the boiling alkaline solution reduces and removes the indigo; and shows that azo dyes pro-

duced on the fiber are resistant to the reducing action of alkaline glucose. The substitution of stannous chloride for a portion of the glucose is described in German Patent No. 268,408, but the authors of the *Sealed Notes* have established the priority of their discovery.—*Bull. Soc. Ind. Mulhouse*, through *Jour. S. D. C.*

GERMAN CHEMICAL TRADES WILL "CARRY ON" WITH WATER-POWER, SHOULD COAL FAIL

Country Has Resources of 24,000,000 Horse-power from This Source

Germany is bending every energy to promote her chemical industry in various countries, report recent visitors to that place, and this is shown by an official statement of the Society for the Protection of Interests of the Chemical Industry of Germany, which held its forty-second general conference in Munich, just before the close of last year. The statement was made public recently by the Chemical Foundation, Inc., which obtained the paper and translated it for the benefit of the industry in the United States. Dr. Frank, acting Chairman-Councilor of Commerce, was one of the principal speakers at the conference and outlined plans for the rehabilitating of the German chemical industry.

Dr. Frank said in part: "To-day we are a trade association and organized purely according to trade. But there are, as you are all aware, preliminary steps carried out in order to create district managing councils. The provisional national economic council shall define these fields. Whether it will become necessary to carry out also the organization of the districts of our association cannot be foretold to-day, but will most likely be the case."

In urging a closer organization of all chemical branches, the speaker said: "I have already declared last year that this was the only really great idea that arose in the revolu-

tion, and I believe that the chemical industry, which has carried it through extensively, became also exemplary in this field for the whole German industry. Again and again the other industries are turning to us in order to obtain a basis for this reorganization.

"The most important question occupying the chemical industry at present is the coal question. Dissension in the industry concerning the distribution of coal is particularly great. The position of the coal commissioner is surely one of the most difficult in the German Empire. Only greater deliveries can bring us relief."

How Germany intends to offset the shortage of coal by developing water-power plants in Bavaria is revealed by a speech made recently by State Councilor Osher von Miller of Munich in that city, a translation of which has also been brought to this country by the Chemical Foundation in the interests of American manufacturers. Von Miller sees little hope for German industry if it is dependent upon coal, and accordingly Germany has spared no effort to develop and construct new plants on Bavarian rivers which will furnish sufficient power to supply a large portion of Germany.

According to figures presented by Von Miller, it will be possible to develop 24,000,000 horse-power. This compares with 6,000,000 horse-power total capacity at Niagara Falls. The 24,000,000 horse-power would take care of practically all industries of the United States.

DYEING ARTIFICIAL SILK

In relation to their dyeing properties, chardonnet, viscose, and cuprammonium silks are all practically straight cellulose, and in their dyeing properties they are identical with cotton, although usually on account of the treatment they have gone through, their affinity for dyes is slightly greater.

Cellulose acetate silk, however, being a cellulose compound, has quite different dyeing properties from the other

artificial silks, and it has different dyeing properties from any other fiber, so that in this respect alone it constitutes a product of entirely new possibilities. Cellulose acetate silk cannot be dyed with direct cotton colors nor with sulphur, acid, or vat colors unless the alkali used in the dyeing is of sufficient strength, and the treatment sufficiently drastic partially to saponify the silk. Those who are familiar with dyeing methods can readily see that the cross-dyeing possibilities of cellulose acetate silk unions are quite outside the range of those of any other artificial silk fiber. For example, it is possible to weave a fabric of cotton warp and acetate silk filling or pattern, and dye the fabric with a direct cotton color, leaving the silk uncolored, or it is possible to dye the fabric with a basic color without mordant, thereby coloring the silk, and leaving the cotton uncolored.

The same can be done with an artificial silk union, part acetate silk, part viscose silk, and even in cotton, wool, and cellulose acetate silk unions it is possible to color the cotton and the wool, and leave the silk uncolored. Cellulose acetate silk is also a very good resist to logwood dyes, which is another distinct advantage.—*Cleaning & Dyeing World*.

BRITISH REGULATIONS FOR DYESTUFF IMPORTS

The British Board of Trade has ruled that the importer need not specify the name of his customer in making application for import licenses, but if needed the Board of Trade may demand the name of the customer with the strict understanding, however, that the information is to be considered as absolutely confidential and not to be divulged by the Board of Trade Licensing Committee. This decision was made in response to the objection made by the importers because of the fact that there are sitting on the Advisory Licensing Committee several manufacturers of dyestuffs. In each case where the Board of Trade makes a request for the name of the customer there

will arise some delay in granting the application.

The British Chemical Trade Association is now trying to induce the Board of Trade to declare pigments and dry colors containing less than 5 per cent synthetic dyes as free of control. The association expects to be successful in its efforts along these lines. Inasmuch as several of the British manufacturers of dyestuffs do not make their own intermediates, but have depended on the importation of the same to maintain their volume of manufacture, it is expected in some quarters that the dyestuffs regulation will be interpreted as not applying to intermediates, otherwise these manufacturers of dyestuffs could logically claim that the Government was discriminating between dye manufacturers in this country.

The Department of Overseas Trade has arranged for its overseas representatives throughout the world to forward complete reports on all importers of chemicals of all descriptions, dyestuffs and colors, oils, gums, etc. These reports will contain the following information: Name and address of the firm; names of directors; financial standing—capital stated, if possible; the products they import; and other useful information.

The British Chemical Trade Association has signed an agreement with the Department of Overseas Trade, and it has arranged that all such reports received by the Department of Overseas Trade in which any of the above prod-

ucts are mentioned shall be handed on to the association. The association in turn will immediately redistribute to all members. These reports are not issued by the Department of Overseas Trade to individual firms; they are published only through approved trade organizations.

NATIONAL REDUCES NUMBER OF DIRECTORS

At the annual meeting of the stockholders of the National Aniline & Chemical Company, Inc., at the head office of the company, 21 Burling Slip, a resolution from the Board of Directors proposing a reduction in the membership of the Board and changing the place of meeting to the offices of the Allied Chemical & Dye Corporation was approved.

The new Board of Directors was elected as follows: William Hamlin Childs, William H. Nichols, William H. Nichols, Jr., Edward L. Pierce, H. H. S. Handy, William J. Matheson, Dr. William Beckers, Dr. R. C. Taggersa, J. W. Newlean, and Orlando F. Weber.

INDIGO IN THE DUTCH EAST INDIES

Indigo is grown on about forty estates in Java, as well as by the natives, says Trade Commissioner Fowler in his recent report. The estate indigo contains from 60 to 80 per cent of indigotine. The native product averages only three-fourths to 1 per cent of indigotine, and is for the greater part used in the island, principally

for battiking, while the overproduction usually finds a market in Singapore. Before the war most of the dry indigo went direct to the Netherlands and the wet product to Singapore. In 1917 Japan entered the market for both the wet and dry product, and in the following two years took the bulk of the dry product. During the past year (1920) Singapore has been an important market for the

Dye-a-Grams

"COLOR IN HOSIERY"—"*Reporter*" headline. It's a fact that there is color in most hosiery. At least, every washwoman knows there is—or was!

—O—
"MARCUS HOOK WORKS"—"*National*" advt. Odd name for a dyestuff works!

—O—
Re "Functions of the Dye Chemist," by B. Leech, Mr. Leech says that the dyer and designer should work in close collaboration. Indeed they do, as a rule; the designer does the collaborating and the dyer does the work!

—O—
"DYES FOR DEFENSE, BUT NOT ONE TINT FOR TRIBUTE"—"*Reporter*" headline. Be careful, Ed., how you use that word "tint." Better if you had said "grain." You're getting a little "Low" on English!

—O—
The recent earthquake didn't begin to shake things up the way the November 2 election did!

—O—
Dipsomaniacs may now be properly designated as Hip-somaniacs.

—O—
Senator, Senator,
Where have you been?
"Been to the White House,"
He said with a grin.

Senator, Senator,
What did you there?
"Helped keep the dye makers
Up in the air!"

G. E. T.



AMERICAN DYESTUFF REPORTER

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In 2 Sections
Section 1



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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

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Vol. 8

New York, April 4, 1921

No. 14

THE "OFF" WEEK

**"Act II, Scene 2: The Wharf"—A Problem in Nomenclature
—Why You Should Be Active While Congress Is Idle**

NOT that it registers any Great Moral Lesson, but merely by way of maintaining the continuity of things, we feel obliged to record that apparently a brand-new actor has stepped into the cast of the uproarious comedy, "The Vanishing Dye Experts," or, "Now You See 'Em and Now You Don't."

The last time the roll was called, two weeks ago, the *dramatis personae* lined up something like this: Drs. Joseph Flachslander and Otto Runge were here, carrying on their hideous, heinous and horrific spells and incantations behind armored walls in Wilmington; Dr. Heinrich Jordan had been arrested in Holland by a German sleuth while trying to get across the border into Belgium and was preparing to contest the suit of the Bayer Company, which had charged him with about everything it could think of, from hangnails to being a Sinn Feiner; while Dr. Max Engelmann, the other refugee, who was thought to be dodging about among the wind-

mills of Holland, had disappeared most mysteriously and completely, *spurlos versenkt*—"leaving no trace."

Now then, who do you s'pose came down the gangplank of the staunch and seaworthy *Duca d'Aosta*, the Royal Italian Mail liner, when it tied up to its wharf in New York harbor last week? Why, nobody else but Herr Gustave MacDonald, "a well-known dye engineer of the Bayer Work, of Elberfeld, Germany"—if you can believe the New York "Evening Telegram"!

But can you? We must confess that when our eye first lighted on "Herr MacDonald" in the columns of that daily, we experienced much the same shock that followed when we first read of Mike Gilhooly, the youthful *Belgian* stoaway, who figured so prominently in the newspapers last year. The reported name and nationality of "Mike," however, proved to be perfectly accurate and susceptible of logical explanation—but "Herr MacDonald"! There is hardly enough

cohesive power in *that* combination to hold it together; it seems as though it must crumble and disintegrate if subjected to much handling. In fact, it gives every evidence of being ready to fly apart with almost explosive violence if even so much as touched with the pointed end of a doubt. Having served our term in a newspaper office and being aware of the chances for error arising from a foreign brand of articulation in conjunction with the subsequent use of the telephone and the hasty transference of a "story" from the "leg" man to the "re-write" man, and being further aware of the German pronunciation of "Max" as "Mocks," we are already sixty-five to seventy per cent persuaded that the gentleman with the reported Scotch-Irish name may turn out to be, after all, none other than the vanishing Max Engelmann.

Not, as we hinted before, that it is Vitally Important. If this attempt to connect the latest arrival with the chemist who gave the slip to the German authorities in Holland seems too weak for consideration, forget it. We shall know soon enough anyway. But if you like to pass a few moments in idle reflection upon the subject—as we must admit we do—then, no doubt, you will be interested in later developments leading up to the Great Unmasking scene in Act III.

At all events, the gentleman is here, and up to the hour of starting *THE REPORTER* on its way to gladden the hearts of its intelligent and discriminating readers, no further information had been vouchsafed. We might use up considerable space in making out a strong case for our theory, citing piquant and engaging analogies from our personal experiences—but to what end? You know our methods, Watson; you know our methods; you have only to apply them!

"Herr MacDonald," states the "Telegram," "declared the German authorities were loath to have him come here." That's a good word. "loath," but it seems pale and

scrawny when confronted with the task of expressing what the German authorities felt. They were so "loath" to let him come here that we'll wager an inspection of "Mac's" coat-tails would reveal a state of affairs akin to the condition of the loose end of a locomotive "special" flag after having done duty through several hard seasons. The account did not state that the dye chemist was breathing hard and casting furtive glances over his shoulder from time to time, nor that he started violently when one of the ship-news reporters tapped him on the arm to attract his attention, but it did announce gravely that he had come here "to go to the American Dye Industry, a du Pont controlled organization, of Wilmington, Del."

Will "G. E. T." please say something funny about this! It looks as though Charles Spalding Thomas, of Washington and Colorado, finding himself suddenly eliminated from the Senatorial scheme of things, had taken up journalism and was now working as a news-gatherer for the "Telegram." If somebody will only send him a clipping of that, Mr. Thomas will be glad to write an eight-day letter to his former pals in the National Capitol, the dominant strain of which would be: "What Did I Tell You!"

Meanwhile, what is to be said of the Worcester (Mass.) "Gazette," which comes out with a rough editorial headed "Give 'Em the Gate"? "'Em" means Drs. Runge and Flachslander. Reacting to Dr. Herty's editorial, this newspaper says chattily, but with charming frankness, that "We do many fool things in the United States, many fool things."

We'll say we do, and because we aren't satisfied with our own efforts, we elect a Senate to think up additional fool things to do. We hire these Senators to go down to Washington and botch up one of the most important questions of national defense now before us—to make a political battledore-and-shuttlecock out

of it instead of treating it at least in a dignified manner. But we are just short of being as foolish as the Massachusetts editor would have us be when, after quoting from Dr. Herty's editorial, he winds up with the interpretative command: "In other words, give 'em the gate."

Some day we may be privileged to print the final editorial in what now promises to be a whole series in The REPORTER. And the editorial can appropriately be headed "Act III, Scene 3: The Gate." But for reasons which have been stated hereinbefore, we believe that the present is not propitious. There is much to be done first, and if the textile industries can see no reason for giving reparations colors the gate, we can see no reason yet for giving the makers of them the gate. True, expert chemical knowledge was not specified as part of the reparations to be exacted from Germany, and Germany might have argued still longer over the terms of the Treaty had the Allies made such a demand, but since it is available and promises to aid in placing us beyond the need of reparation or any other colors from abroad, then let us make use of it to the fullest extent. Both chemists and colors are equally the product of the system which first produced poison gas and introduced it into warfare, and any odium which attaches to one belongs equally to the other. In order for us to be consistent, the imported chemists should only be escorted to a gate which can afterwards be closed against any further shipments of German dyestuffs to this country.

This is an off week, or you may be sure you would never have seen the relatively unimportant question of the imported German dye chemists occupying so much space. The old Congress has gone out, and the new one will not gather to take its place until next Monday. Things are at a standstill so far as legislation is concerned, but at this time they should not be at a standstill in the dye industry. Once again we have been

granted a period of grace in which to prepare for a struggle. It should not be neglected, for the coming battle with the forces of apathy, stupidity and downright pro-German interests will without doubt be the supreme one. Hence, while maintaining its original position with regard to the du Pont chemists, The REPORTER desires coincidentally to express the earnest opinion that now or never must every energy be applied to making ready for the final effort. Now or never must all our reserve forces be gathered and massed on the Washington front. Congress *must* be made to see the immediate necessity of immediate action, and the overwhelming folly of further ignoring facts which cannot but be so plain by this time that the veriest dunce could comprehend them.

What do you read in the news this week? For one thing you see with gratification that Joseph H. Choate, Jr., has repeated his effective address on the impossibility of disarmament

without first making sure of a self-contained dye industry, only obtainable through licensing. You observe that he chose an excellent body before which to express his thoughts—the Advertising Club, of New York—and that the newspapers were again generous with their space for a repetition of the arguments of the dye industry. All this helps to awaken the public.

Then you may also read that Representative Longworth has abandoned all hope of getting a licensing measure through Congress, and that he proposes to attach the Dye bill to the general chemical schedule in much the form in which it was presented to the House two years ago next month. You may blink your eyes a bit at that—and pass on.

Finally, you may read that Mr. Longworth, so far from receding from his first position, has instead actually advanced it considerably, to the extent that he is now firmly persuaded that the *only* means of saving the dye industry is by the licensing method, and that he intends to put up a stiff battle—if necessary—in order to get his bill through as amended by the Senate Finance Committee.

That is good news, that last—and it is accurate news. But you must not be content merely to read the news, however absorbing it may be. It must be part of your duty, from now until Congress meets—and after—to help *make* the news. You must help make the news which is presently to come out of Washington that Congress has passed the licensing measure, that the Senate has passed it, that President Harding has signed it!

This you can only accomplish by speaking. Use the mails for this purpose. You can speak in no more effective way to Congress than through the mails. We have said this many times before, and no doubt it is extremely tiresome for you to read the same plea again, especially if you have already written.

But if you know what will really

help the cause, you will forget to be bored and *write again*. We do not know how to say more than this. Do it! It's all you can do, but it means, perhaps, more than you realize. Will you take our word for it? Be assured that the repetition alone adds strength to your letters. The mere quantity of mail received advocating the passage of the licensing system cannot but make a strong impression on Representatives and Senators alike.

The dye industry is using every means at its command to build itself up to a point where no protective measure other than an ordinary tariff will be needed. It must not be allowed to slip back at this stage of the game for want of proper support. That support must come from reader of *The REPORTER* and many others in allied trades. And the most effective time to give that support will be the next few weeks—NOW, while the chemical schedule is in process of preparation, and LATER, while Congress is debating it.

ALLIED CHEMICAL & DYE VOTES TO INCREASE CAPITAL

The Allied Chemical & Dye Corporation stockholders have voted to increase the capital of the company from \$48,043,675 to \$113,043,675. This will increase the number of shares which the corporation may issue from 2,516,719 shares, of which 373,264 shares, of the amount of par value of \$100 each, are preferred stock, and 2,143,455 shares are common stock without any nominal or par value to 4,166,719 shares, of which 973,264 shares of the amount or par value of \$100 each are to be preferred stock, and 3,143,455 shares are to be common stock without any nominal or par value.

Orlando F. Weber, president of the Allied Chemical & Dye Corporation, who presided as chairman at the special meeting, emphasized the point that no additional stock issue is now under consideration. He stated that

the authorized increase was made large enough to obviate the necessity of repeated proceedings for future issues in the event any are required.

NEW BRANCH FOR CIBA CO.

The Ciba Company, Inc., has opened a new branch office at 26 Custom House Street, Providence, R. I., in charge of Ralph F. Culver, formerly associated with Drake & Co., of Providence. The business of The Ciba Company in Rhode Island, Connecticut and a portion of Massachusetts will be taken care of from this office, and stocks will be carried at Providence.

DU PONT ISSUES 1920 STATEMENT

Net earnings of \$5,058,022 and sales of \$93,983,291 are shown in the annual report for 1920 of E. I. du Pont de Nemours & Co. These figures compare with sales of \$105,437,923 and net earnings of \$11,620,953 in 1919. Earnings applicable to common stock were \$10,749,807, of which \$6,267,747 was paid in cash dividends. In addition, the undivided earnings accruing to the company through its stock holdings in subsidiary and other companies, aggregated approximately \$13,000,000, making a total of \$23,749,807, equivalent to approximately \$37.50 per share of common stock.

The company's suspended Government war contracts form a chapter of the report. There were thirty-seven

of these claims, aggregating \$26,375,692, on December 31, 1920; but, by reason of advances from the United States for purchases of materials in claims, the net cash due the company was only \$2,013,410.

As to twenty-one of the claims, aggregating \$23,075,327, agreements have been reached with auditors and the local army boards showing that there is due the company in cash \$345,693. The remaining sixteen claims, aggregating \$3,300,365, on which there is \$1,658,716 cash due the company, are still in process of settlement.

"NOT PREJUDICE, BUT BUSINESS"

**British Chemical Manufacturer Says
England Must Throw Off
German Yoke**

W. J. U. Woolcock, C.B.E., M.P., general manager of the Association of British Chemical Manufacturers, has issued a statement calling attention to the present position of the British fine chemical industry. "The next month or so," he says, "will decide whether, in the years to come, Great Britain is to make fine chemicals for all the world, or whether we and the other nations are once more to turn to Germany for our laboratory and photographic chemicals, for essential drugs like antipyrin, phenacetin, cocaine, salicylates, aspirin, salvarsan and others. The case
(Concluded on page 12.)

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In Two Sections—Section One

Pointed solely toward the welfare and growth
of the American Dyestuff Industry. Unbiased
contributions appreciated.

A. P. HOWES, President

LAURANCE T. CLARK, Editor

SENSITIVENESS, AND SUCH

Our neighbor, "Drug and Chemical Markets," has been called to task by one of its readers for daring to print an editorial denouncing a retailer for labeling some of his goods "foreign dyed." The letter, which this excellent journal prints at the top of its correspondence column, is as follows:

"Editor, 'Drug and Chemical Markets':

"I have noticed on page 628 of your issue of March 23, the article entitled 'The New Attack on American Dyes.' I think there is a tendency to overdo this kind of thing. Your criticism is because certain department store advertisements featured 'foreign dyed' goods. If we display such an undue sensitiveness that we are constrained to howl to high heaven every time anything of this kind takes place, we shall do more harm than good.

"There have always been certain retail dealers, catering to a particular class of the community, who have always featured their goods as 'foreign' or as 'imported' thereby conveying the inference that imported goods are better than domestic. A very considerable section of the community having more money than brains, have been educated in this belief. Imported clothes, imported silks, imported shoes, have always commanded the preference of this class. Yet, the American manufacturers have never unduly opposed this tendency and have developed their manufactures in spite of it.

"It seems to me that if we go out of our way to attack this kind of thing,

and to insist that no one shall, under any conceivable circumstances, venture to appeal to that class of the community which has always thought 'imported goods' to be better than home made goods, as far as dyes are concerned, we shall show weakness rather than strength.

"H. J. MACDONALD."

It is, of course, inconceivable that this gentleman could be a relative of the "Herr MacDonald" told of in the "Evening Telegram" and referred to in the article which begins this issue. But his attitude would seem to indicate a point of view not so vastly different from the one which that interesting emigrant might be expected to take.

Mr. MacDonald means well, and so far as his argument goes, it is sound enough. But he does not seem to perceive the fact that the question of dyes is an exceedingly delicate one just now, and that a phrase which would not have been given a passing thought prior to 1914 or 1915 now carries with it implications which touch the public in some raw places.

There is nothing inherently wrong in telling the dear public that your goods are foreign dyed—unless you want to make foreign dyed goods so common that there will no longer be any distinction in thus labeling them, thereby destroying the very appeal upon which you rely to catch the trade of those who fancy themselves discriminating. There will be no harm in it after the Dye bill has been passed. And had it not been for the particularly striking tendency of the department stores to play—through ignorance—the Cartel's game, it might not be so unfortunate even at this time.

But as matters stand it is very bad business. All agree that public support must be won, and that public confidence in American dyes must be strong. This does not mean that the public must be lied to—there has been too much of that already, and it has been a malicious sort of lying—but that it must be made to understand the simple truth! The truth is sufficient to enlist its hearty

support; most of the trouble has resulted from the real truth having been withheld.

A spirited campaign is now on to preach the gospel, and it is meeting with some success. It must meet with far more success before the victory will be assured, and there is a deeply-rooted popular error to overcome first. The story of the "right dyes wrongly applied" has not yet had time enough to sink in, nor has the relationship between dyes and the national defense had time enough, either. Consequently the public, still regarding a domestic dye industry in the light of a luxury rather than a necessity, travels yet further away from the proper state of mind every time a garment's colors prove fugitive, because it blames the dyes and not the profiteering dyers for the annoyance.

Finally, the campaign of education being conducted among the department store buyers has not been so completely successful that the time has come to abandon it just yet! Any further con-

versions which can be made are more than timely; they are needed, and we believe that in view of this fact, no effort should be relaxed by the trade journals to keep those behind the campaigns keyed up to a lively pitch of enthusiasm.

Mr. MacDonald uses the pronoun "we" in a manner which implies that he is engaged in the dye producing industry himself. If that is the case he should take an hour off to review the situation afresh. It would seem that he, and not our contemporary, was "unduly sensitive" and that his sensitiveness would better be abandoned in favor of an unyielding callousness to the imagined sufferings of those who are being educated in the A B C of the American dye industry.

This is not the time for abandoning propaganda. We recommend and endorse Dr. Herty's treatment, "Thinking It Through." Instead of advocating retrenchment, rather let us say: "Keep right after 'em; step on it; give 'er the gas!"

"NOT PREJUDICE, BUT BUSINESS"

(Concluded from page 9.)

against buying these fine chemicals from the Germans is not founded on any foolish post-war prejudice against trading with a former enemy. It is a matter of international principle, only less grave than the surrender of the High Seas Fleet and the reduction of the German army. To-day it should not be necessary to remind any British citizen that it was Germany's phalanx of expert chemists, with their experienced workmen, which gave her so tremendous an advantage in the early days of the struggle. That military asset was, of course, the direct consequence of the fact that Germany had been chemical maker to the world; nor for several reasons was it possible in those days to compete with the laboratories which in 1914 were to become munition factories. For one thing, Germany had built up what was practically a monopoly in the fine chemical industry, because the raw materials for that industry are largely the by-products of the dyestuff industry—by that time, of course, almost a German monopoly."

JIGGER DYEING

The following rules for jigger dyeing are useful when soda and Glauber's salt are used:

1. For light shades the liquor should be as dilute as possible.

2. Dyeing is started at 120 deg. Fahr., with the soda and dyestuff alone.

3. After four passages through the dyebath, the Glauber's salt is added, divided for two ends, and two to four passages more are given at about 175 deg. Fahr.

4. Very light tints of direct colors are usually dyed without Glauber's salt, but with soda and 1½ to 3 per cent of Turkey red oil per 10 gallons of bath. The soda is frequently replaced by phosphate of soda (5 oz. for every 10 gallons of dyebath).

5. For medium shades and dark shades the bath is first boiled up with

soda, when this does not spoil the colors, to remedy the hardness of the bath, and to facilitate the penetration of the dyestuff solution. One-half of the coloring matter is added in solution and the material is entered. After the first passage, the rest of the color solution is added, and three more passages are given. Finally, the Glauber's salt is added in two portions, and the dyeing is finished off in four to six more passages, with the bath at the simmer.

6. If the desired shade is not obtained, a dilute solution of the requisite dyestuff is added, for which purpose the level dyeing dyestuffs are principally recommended.

7. For dyeing goods which are not easily penetrated, a little more soda is used, and in some cases, particularly for darker colors, 1½ to 3 oz. of Turkey red oil for every 10 gallons of liquor are also added.

8. The repeated and prolonged use of a standing bath can only be recommended for dark shades, and only as long as the liquor has not been made turbid by the dissolved size and other impurities.

9. To replenish the standing bath the following approximate additions are made: one-quarter of soda ash, two-thirds to three-quarters of dyestuff, and one-quarter of Glauber's salt used for the first bath.

10. To control the strength of the salt present in the dye liquor, the hydrometer is employed. The dyebath should stand for dark shades at about 6 or 7 deg. Tw., at a temperature of 60 deg. Fahr.

11. The jigger is the machine most extensively employed for dyeing cotton piece goods; it admits an expeditious and easy working with a small volume of dye liquor.

12. According to the weight of the goods, the dyeing on the jigger requires from three-quarters of an hour to one and a half hours, the goods running at an average speed of about 30 to 60 yards per minute. A quicker movement is not advisable, especially when handling large rolls.

Trials on a large scale with the pad-

ding machine should also be made. This machine is chiefly employed for pale and medium shades. Padding machines with either two or three rollers are employed; those with three rollers give the same effect as those with two, but with fewer passages.

The trough of the padding machine is best made of wood, in machines with two rollers it holds some 12 or 15 gallons, whilst the capacity of a trough of a three-roller machine is nearly 25 gallons. The smallest type of padding machine is, however, quite sufficient for any trials required in a color works. The coloring baths are heated either by an open or by a closed steam pipe, and are prepared for the padding of cotton cloth with direct colors for pale shades with the requisite quantity of coloring matter, 3 oz. of soda ash, and from 5 to 8 oz. of Glauber's salt for every 10 gallons of treating liquid; whilst for medium shades the quantity of soda ash is diminished to $1\frac{1}{2}$ oz., and that of Glauber's salt is increased to 13 or 16 oz. for every 10 gallons of coloring bath.

After half the requisite coloring solution and soda has been added, the bath is heated to about 115 deg. Fahr., and one passage is given. The rest of the color solution is then added with sufficient water to bring the liquid up to its original height for the second passage. The temperature is then raised to about 140 deg. Fahr., and the Glauber's salt is added, divided for two ends, and after two more passages a swatch is taken off for matching. For medium shades the temperature is raised to 175 deg. Fahr.

It may sometimes be necessary to carry out dyeing on the padding ma-

chine simultaneously with finishing or sizing, the process being chiefly used for pale shades and for padding cotton prints. In this case the coloring matter, which is dissolved in boiling condensed water, is added to the hot finishing paste, the dyeing and finishing operations being thus combined.

Dyeing in the continuous dyeing machine may sometimes be required when cheap dyeing is to be done.

A simple form of continuous machine is a combination of four compartments, each provided with an upper and lower series of guiding rollers and with squeezing rollers of metal, the uppermost being coated with rubber. Openers are fixed at a suitable distance from these squeezers. The liquor is heated by closed steam coils.

The gray goods run from a small iron truck, are boiled in the first compartment, which is charged with $3\frac{1}{2}$ lb. of soda ash, and freshened up during the passage of the cloth with $\frac{1}{2}$ per cent soda ash on the dry weight of the goods. The bath rapidly turns brown and dirty owing to dissolved size and other impurities, and is, therefore, renewed twice daily.

The three dyeing compartments, with a combined capacity of 650 gallons of liquor, are charged with equal quantities of dye liquor, at first with about 3 lb. of the direct color, dissolved in 10 gallons of water, together with some soda, and replenished during the passage with 5 to $5\frac{1}{2}$ per cent of color on the weight of the goods. The speed of the machine is so regulated that the pieces remain about 3 minutes in the bath.

The goods are run off on to another truck, and are then led to be rinsed on

another machine. It is advantageous to defer the rinsing of the pieces for a little while, but not for too long, or it is less easy to clean them thoroughly. The dyebaths can be used continuously for a long time, and should be exhausted so far as possible before their renewal, by passing the goods through without adding fresh color.

MATCHING

The suitability of a new coloring matter for matching purposes is another very important test. The data that may be gathered can be summarized as follows:

1. The new color agrees very well with the matching colors used in the works, and may be substituted with advantage for one of the said colors.

2. The new color, although agreeing very well with the other matching colors used in the works, is different in shade and cannot, therefore, be substituted by itself alone for any of the colors.

3. The new color produces uneven shades with the other matching colors used in the works.

4. The new color is altered in shade by the other colors.

The advantages and disadvantages of after-treatment of a new coloring matter may have sometimes to be investigated. The nature of after-treatment varies, of course, with one class or other of the colors, and can only be decided after it has been definitely proved what dye bath it is best to adopt. Thus direct cotton colors can be improved upon in some instances by chroming, treating with chrome and copper salts, diazotizing, treating with diazotized paranitraniline, with brightening colors, and coupling, and wool colors by after-chroming, tinting, and souring; silk colors by souring.

When a color has proved to be of service the next step is to find out the best way of using it.

In the case of a direct cotton color jigger dyeing should be tried. A small piece of cotton cloth is weighed, and about twice its weight of dyeing color,

containing from 8 oz. to 2 lb. of Glauber's salt for every 10 gallons of liquid, in accordance with the shade dyed, and from $\frac{1}{2}$ to 4 per cent of dyestuff, in accordance with the shade which can be dyed to the better advantage as regards fastness to rubbing and brilliance of shade.

With certain bright colors it is advantageous to substitute soap and phosphate of soda for the salt bath, while with others it is of advantage to add soda to the dye bath, generally 3 oz. for every ten gallons of dye bath.—*Dyer & Calico Printer.*

WHAT, AGAIN!

Artificial wool which has been under test at Leeds University is produced from cotton waste, its basis being cellulose acetate, says a press report. It is claimed that the product is an even better insulator against heat and cold than wool, that it takes dyes successfully and that it will wear well. In the experiments made it has been satisfactorily converted into fabrics. Equal parts of artificial wool and natural wool gave a cloth resembling tweed, and the head of the University's textile department has suggested that this should be useful for men or women fancying homespun effects in clothing. Cheapness and possible wearing qualities constitute the special appeal of the material. Its defects are said to include inelasticity and liability to break and these unfit it for yarns of the worsted type, requiring a combing length of two inches or more, though it may serve well for yarn and cloth where short fibers are suitable.

Under the laws of California the Guasti Finch Chemical Company has been incorporated to manufacture chemicals, dyes, etc. The capital of the new concern is \$50,000 and headquarters will be in Vernon, Cal. The incorporators are Seconda Guasti, L. S. Finch and J. I. Bariotti, Los Angeles.

TEXTILE ALLIANCE WARNS DYE CONSUMERS TO ACT PROMPTLY OR LOSE REPARATION COLORS

Following is the text of a letter being sent out by the Textile Alliance, Inc., 45 East Seventeenth Street, New York, to dye consumers, notifying them of the availability of certain German Reparation Colors under license from the War Trade Board:

"Gentlemen:—

"For the purpose of assisting you if possible in obtaining your present and future requirements of importable German Reparation dyestuffs we deem it advisable to inform you that there are certain substantial quantities of such dyestuffs now available to American consumers from the so-called 'German Daily Production' stocks but that these quantities will forever be lost to such consumers if orders are not placed with the German manufacturers within prescribed times which are soon to expire.

"In addition to the above stocks which are available we now have ready for delivery at our Hoboken warehouse a large quantity of such German reparation dyestuffs as well as an additional quantity at our Antwerp warehouse which could be promptly shipped to this country.

"If you are to require any German dyestuffs that are permitted to be imported under the regulations prescribed by the War Trade Board Section of the Department of State we would advise you to at once communicate with us so that we may inform you if the required dyes are available or now in our warehouses, and in the event that we can supply them from either of these sources we will furnish you with particulars in regard to price and probable date of delivery."

The Caramel Color Company of America has been incorporated under the laws of New York to deal in drugs and chemicals. Headquarters will be in Brooklyn, and the capital is \$5,000. The incorporators include B. Levine, A. Adler and A. S. Fisher.

STRAW AND HEMP DYEING

By L. G. HAYES

Both straw and hemp in properties regarding their affinity towards dyestuffs and bleaching agents they resemble the jute fibers more than any other. Straw generally is from the wheat stalk, being split into the desired width and braided and requires no other preliminary treatment. Hemp has to be retted and beaten out to get the long fibers in the stalk of the plant in a manner similar to that employed in the linen industry. The greatest use of both of these fibers as well as wood chip is, of course, in the making of ladies' and children's millinery and also men's headware, and since the dyeing season for these materials commences soon a few remarks relative to the dyeing of these fibers may be of interest.

MARKET FORMS

Straw comes into the market in hanks about 15 to 20 inches in length and weighing about four ounces. The straw is braided after whatever style the fashions decree; some braids being loosely woven, others tightly woven. The outer surface of straw has a high natural gloss which is due to the hard waxes contained in it, and this is taken advantage of in a number of ways, one being to braid it so that half the braid has the gloss uppermost and the other half is dull, which gives a unique effect when dyed.

Hemp also comes into the market in "pieces," and is braided similar to straw but much more tightly, making it

more difficult to penetrate in the dyeing. A natural wax similar to that of straw is also on hemp, but not to such a great degree. There are two great classes of hemp; namely, Milan hemp, which is the finer quality, and plain or Tayol hemp, the cheaper grade. From the viewpoint of the dyer these two grades are the same, as their dyeing properties are identical in all respects.

Wood chip is only used in the cheaper grades of ladies' hats, but finds its greatest use in the manufacture of children's hats. It generally comes in braids of three-ply, and is so light in color that previous bleaching is unnecessary. Owing to its great brittleness when dry, care must be taken in the handling of this material.

METHOD OF DYEING

As above stated, all of these goods come into the market in what is known as a "piece" averaging twelve inches in length. These pieces are securely tied at three inches from each end with strings. To assure penetration, these tie-bands must be cut and then replaced by a looser string to help the piece from becoming tangled. Girls are generally employed to run strings through the looped ends of the pieces, and then ten or twelve are tied together with a piece of light wire or heavy cord, which serves as a leader by which the bundle may be removed from the dye-tub.

Most of this dyeing is done in large oblong tubs in which the straw or hemp is packed loosely, and when properly packed every little agitating is necessary; the essential point is to keep the material entirely submerged. The leader strings are fastened to the top of the tub and the goods can be agitated when necessary and removed after dyeing by means of them.

As before stated, these fibers resemble jute in many respects, and in their affinities toward dyestuffs they are practically identical. They all have power to attract basic colors without a mordant and may be dyed with either acid or direct cotton colors as the shade and fastness may require. The general rule, however, is that basic colors are

used for brilliant deep shades, acid colors for shades on material difficult to penetrate, direct colors while rarely used on straw are most important for the production on shades on hemp braids.

For the majority of shades bleaching of the material will not be necessary, but when it is, peroxide of hydrogen or sodium should be used according to the regular formula. Chloride of lime should not be used as it has a very powerful action on the natural waxes, destroying them when used to excess.

One of the most important things to be observed in this class of work is that the material should be thoroughly wetted out previous to entering in the dye-bath. This natural wax is very difficult to wet and is really water repellent to a certain extent. It is a good plan to anticipate the needs of the following day and boil up the straw the night before and allow it to soak overnight. However, two or three hours is generally sufficient. Soda should be entirely avoided in wetting straw, as it turns the fiber yellow and also makes it very harsh. And this yellow bottom is very undesirable when producing certain shades. It may, however, be used in wetting out hemp if used in moderation. Some authorities recommend a small quantity of bisulphite of soda to soak.

COLORS FOR STRAW

As before stated, basic and acid colors are mainly used for this fiber, and the following list of colors which are obtainable to-day will be found sufficient to produce all the seasonable shades.

The well-wetted material should be entered into the lukewarm dyebath in a warm state, as in this condition the natural wax is soft and pliable which greatly aids penetration. The basic colors are dyed with the necessary amount of dyestuff and from 3 to 5 per cent of acetic acid (28 deg. Tw.), depending upon the depth of the shade, and boiled from two to three hours moderately, after which they are removed from the dyebath and washed.

The acid colors are handled in the same manner, with the exception that the dyeing is started without any acid and it is added in small amounts. The dyeing operation may take a little longer owing to the slower drawing power of the acid colors.

BLACKS

Blacks are produced by a mixture of basic colors in the proper proportions, the colors generally used being Malachite Green, Methyl Violet and Bismarck Brown.

The material should be dried at a moderate temperature. It may be noticed that the basic colors have a light bronzy color after drying, but, while objectionable, this is entirely removed in the sizing of hot shellac that the hats receive after they are sewn and before they are shaped in the hydraulic process.

COLORS FOR HEMP AND CHIP

Hemp and chip are generally dyed with direct colors. The dyebath is made up with the color and the necessary amount of salt and the warm goods entered and boiled from one to three hours, depending upon the amount of color used and also having regard to the penetration. With goods difficult to dye through it is recommended to start the dyeing operation without salt, giving the dye a chance to work through and then adding the salt in small quantities. Basic colors are also used in hemp dyeing where the shade desired cannot be obtained with direct colors. They are dyed exactly as recommended for straw dyeing, and the same colors can be employed.

THE STANDING BATH

When dyeing black and navy blues it will be found advantageous to maintain a standing bath; that is, to add a smaller quantity of color each successive time in the first three or four batches until approximately one-half of the amount is used. Thereafter continue using one-half the amount, and every

fourth batch leave out the salt to prevent precipitation of the color. The following table will explain the method:

	First Per Cent	Second Per Cent	Third Per Cent	Fourth Per Cent
Color	6	5	4½	3¾
Salt	30	20	15	15

REDYES

A large quantity of ladies' hats are dyed over each year, and the dyeing methods are exactly the same as for the new fibers. Naturally the finish of shellac or varnish, as the case may be, must be removed previous to dyeing. With straw hats dyed with either basic or acid colors the cotton threads with which the hats are sewn will not dye, and they will have to be speck dyed in a warm bath with suitable direct colors.—*Colour Trade Journal*

THE DYEING OF ARTIFICIAL SILK

By L. P. WILSON and M. IMISON

The dyeing of artificial silk has as a rule, been considered to be practically identical with the dyeing of cotton, but since it has a greater affinity for dye-stuffs, and since unevenness in shade is occasionally observed in the dyed material, it was thought desirable to investigate the dyeing of viscose artificial silk from a fresh standpoint.

It has hitherto been assumed that all direct cotton colors are suitable for use with artificial silk as with cotton, but recent research has clearly shown that only a limited number can be consid-

ered to be eminently suitable from the point of view of giving even effects. The reason for this is that many of these colors are extremely sensitive to those small differences of dyeing affinity which are at present liable to occur in artificial silk, as indeed they do in all textile fibers, but which in the case of short fibers, such as cotton and wool, are concealed by the mixing of a very large number of fibers to form a thread.

Among the sulphur colors also there are many which are very sensitive to variations in the affinity for dyes of the artificial-silk fibers, but fortunately the "even" or less sensitive colors of this class include shades which help to fill in the gaps in the range of "even" direct cotton colors. By the term "even" as applied to dyestuffs in this connection is meant the property of the dyestuff of giving an equal depth of color on artificial-silk fibers of different affinities.

Tannic acid, which is used as a mordant for basic dyestuffs, is taken up by the thread like a dyestuff, and behaves to a certain extent in the objectionable manner of many of the direct cotton and sulphur colors; thus, if there are irregularities in the artificial silk, the basic colors when used with a tannic-acid mordant may give uneven results. Where they are used for topping other dyestuffs the final result is dependent upon the effect obtained with the bottom color.

Sky Blue FF is one of the dyes which is frequently connected with complaints of uneven dyeing, but recent research has shown that if there are some conspicuous offenders in this respect, there are others—*i. e.*, Chrysophenine G, of which no complaint can reasonably be made, since they consistently give even shades when used in orthodox manner.

Methods have been devised which serve to measure the extent to which a dyestuff can exhibit unevenness. A large number of dyes have been tested, and, according to the degree of evenness which they show with fibers of known different affinities, when dyed under standard conditions, have been classified as "even," "moderately even," and "uneven."

(To be concluded.)

Dye-a-Grams

The income tax of a bootlegger—yes, yes; go on!—should be classed as a Gin-Come tax.

—O—

"Incorporated Dyestuffs"—S. R. David & Co. Advt. We would ask S. R. D.: Incorporated with what?

—O—

Very seldom, according to our observation, is an argument ever settled. It is either postponed or forgotten.

—O—

Food for thought: The cover of The REPORTER for March 14 shows at the top an American eagle, and at the bottom of the page the heading: "List of Dyes Licensed by W. T. B. for February Import"! (It may be food, G. E. T., but woefully short rations, we hope.—Ed.)

—O—

The time is coming slowly but surely when the Dye bill will be passed. Sanity cannot be regained instantly. (We feel quarrelsome this week; whaddya mean "regained," anyway?—Ed.)

—O—

Noted among some recent newspaper advertising: "For Sale—A full blooded cow, giving milk, three tons of hay, a lot of chickens and several stoves"!

—O—

"Not a 'Riot of Color,' but the Organization of Color"—National advt. Still, it takes organization to stage a successful "riot"!

G. E. T.

Under the laws of Delaware the Amber Dye Works have been incorporated with a capital of \$75,000. The incorporators consist of F. A. Hantsell, J. Vernon Pimm and E. M. MacFarland, of Philadelphia.

The New York Textile School, according to a recent announcement, is the fortunate recipient of a complete dye laboratory, the gift of H. A. Metz & Co., Inc. Several thousand dollars was expended on equipment alone by the donors, and the "lab" is up to date in every respect.



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No. 15

GERMAN DYE PLANTS AS POTENTIAL ARSENALS

**Official Report of British Commission Gives Startling Facts
Showing German Factories as Menace to World Peace**

POTENTIAL arsenals are the German dye and chemical factories, as shown from the report of the British Mission sent to visit such establishments in the Occupied Zone, which has just been published in the "Journal of Industrial and Engineering Chemistry," the official organ of the American Chemical Society.

Much has been written within the last two years about the use of the dye plants of Germany as the source of her supply of poison gas during the war. Under the heading of "Specific Facts" the actual details of the report, with names of the factories, their output, and their normal capacity are now given in such a way that the general public may grasp the situation. The report is signed by Major General H. Hartley, who was associated with British army officers and chemical experts, as well as with delegates from the Allied Governments, including the United States, France, Italy and Belgium.

"At first," to quote from the official

report, "chlorine and phosgene were the main requirements but afterwards a variety of organic substances were employed, all of which were made by the factories of the I. G. combination. Many of these substances were new and difficult to prepare, and rapid production was only possible owing to the speed with which the peace organization of the dye factories could be utilized for that purpose.

"When the German Government wished to introduce a new gas, a conference of the various firms was held at Berlin to determine how the manufacture should be subdivided in order to use existing plants to the best advantage. For instance, the initial stages of the manufacture of mustard gas were carried out at Ludwigshafen and the final stage at Leverkusen.

The table on the second page following shows the production of gas and intermediate products in the various factories visited.

As a result of its visit the British Mission gained a clear impression of

the military value of the German chemical industry and of the preparations made before the outbreak of hostilities.

"Some years before the war," to quote from the report, "a combination was formed by the Bayer, Badische and the A. G. P. A. companies, and somewhat later a second group was formed which included Meister Lucius & Bruning, Caselin & Kalle. During the war these two groups amalgamated and the Griesheim, Elektron, Weilerter Meer, Leonhardt and other smaller companies entered the combination, which is known as the I. G. It was largely owing to the efforts of this combination that Germany was enabled to continue the war in spite of the blockade. The I. G. works produced the bulk of the synthetic ammonia and nitric acid needed for the production of explosives and fertilizers, all the poison gas with the exception of some chlorine and phosgene and a large proportion of the high explosives.

"The principal materials concerned are ammonia, nitric acid, sulphuric acid and chlorine, as it was on the output of these that the war production of chemical munitions depended. The expansion of output by the factories of the I. G. combination during the war is shown by the following tables:

Ammonia (Metric Tons NH_3 per Day)

	1914	1918
Oppau	25	250
Merseburg	(*)	400
Total	25	650

*Nil.

Nitric Acid (Metric Tons 100 Per Cent
Acid per Day)

	1914	1918
Leverkusen	56	180
Hochst	150	375
Oppau	(?)	100
Ludwigshafen	40(?)	40
Weiler ter Meer.....	12	24
Total	258	719

"Oppau has the power to produce now 500 tons HNO_3 daily, still retaining sufficient ammonia to supply the output at Hochst.

Sulphuric Acid (Metric Tons 100 Per Cent
Acid per Day)

	1914	1918
Leverkusen	340	470
Hochst	224	280
Ludwigshafen	275	410
Weiler ter Meer.....	48	60
Total	887	1,220

"No arrangements appear to have been made prior to the outbreak of the war to utilize the resources of any of the dye factories for war purposes, and on mobilization their chemists were called up for military service. After the battle of the Marne the Government realized the need for expanding the output of explosives and most of the chemical works were producing small quantities by the end of 1914. The demands made on them increased during 1915, but it was not until 1916 that plant was laid down to assist in the enormous production of explosives required by the Hindenburg program. Most of the big extensions of the synthetic ammonia and of the nitric and sulphuric acid plants date from this time, many chemists being released from the army and the scientific staff of some of the works being augmented. Standardized plant used for the manufacture of dyes was converted for the production of explosives with remarkable speed; for instance, at Leverkusen a T. N. T. plant producing 250 tons per month was put into operation in six weeks.

"The figures for the output of explosives and gas show the great military value of the factories of the I. G. combination. Although no arrangements had been made to mobilize them at the outbreak of hostilities, they were rapidly converted to war purposes, thanks to their highly trained personnel and the great technical resources of their peace organization. In the future it is clear that every chemical factory must be regarded as a potential arsenal and other nations cannot therefore submit to the domination of certain sections of chemical industry which Germany exercised before the war. For

PROPELLANT EXPLOSIVES AND DETONATING SUBSTANCES
(Metric tons per week.)

Factory	Nitrocellulose powder	Diethyl diphenylurea	Diphenylamine	Nitroglycerine	Cordite paste	Dynamite	Tetryl	Fulminate	Lead azide
Urdingen	35	7	..	..	..	..	..	..
Kuppersteg	0.7
Troisdorf	250	..	..	21	40	..	6	7	0.7
Schleibusch
Opladen	35	75	..	..	..	..
Wiesdorf	(?)50	40	..	..	..	..

OUTPUT OF FINISHED POISON GASES FROM VARIOUS WORKS

1. Chlorine	Factory	Monthly Output (metric tons)		Total Production (if known tons)	Date of Commencement
		Average	Maximum		
.....	Leverkusen	600	..	..	Prior to war
.....	Hochst	240	..	..	do
.....	Ludwigshafen	860	1,261	38,600	do
2. Phosgene	Leverkusen .....	..	30	..	do
.....	Ludwigshafen	288	621	10,682	do
3. Diphosgene	Leverkusen .....	..	300	..	June, 1915
.....	Hochst	139	266	3,616	September, 1916
4. Chlorpicrin	Leverkusen .....	..	200	..	July, 1916
.....	Hochst	45	101	1,127	August, 1916
5. Xylol bromide	Leverkusen .....	..	60	..	March, 1915
6. Bromacetone	Leverkusen .....	..	20	..	July, 1916
7. Brom acetone, bromethyl, methylketone	Hochst	19	45	685	April, 1915
8. Phenyl carbylamine chlo- ride	Hochst	65	124	721	March, 1917
9. Mustard gas	Leverkusen .....	..	300	4,500*	Before July, 1917
10. Diphenylchlor arsine	Hochst	150	300	3,000	May, 1917
.....	Diphenylcyano arsine .....	..	..	..	February, 1918
11. Ethyldichlor arsine	Hochst	78	150	1,092	August, 1917
12. Dichlormethyl	Hochst	26	51	233	September, 1917
13. Dibromomethyl ether	Hochst	7	29	69	April, 1917

*Estimated from capacity of plant. Probably the same quantity was produced at some other factory as the output of thiodiglycol from Ludwigshafen would suffice for this.

OUTPUT OF INTERMEDIATE PRODUCTS FOR POISON GAS MANUFACTURE

Finished Gas	Intermediate Products	Total Output (metric tons)	Place of Production	Destination of Intermediate Products
Phenylcarbylamine	Phenyl mustard oil..	(*)	Kalle	Hochst
Mustard gas	Thiodiglycol	7,026	Ludwigshafen	Leverkusen and one other factor
Diphenylchlorarsine	Phenyl arsenic acid..	1,600	do	Unknown
.....	Diphenylarsenic acid..	4,800	Kalle Leverkusen	do Probably A. G. F. A., Berlin
Ethyldichlorarsine	Ethyl arsenious oxide	840	Ludwigshafen	Hochst

*Not obtained.

NOTE—In addition Hochst produced 3,000 tons of diphenylchlor and cyanarsines from own intermediates.

military security it is essential that each country should have its chemical industry firmly established, and this must be secured as one of the conditions of peace, as otherwise we are leaving Germany in possession of a weapon which will be a permanent menace to the peace of the world.

"The key to Germany's war production of explosives was the Haber process for the production of ammonia from atmospheric nitrogen. It is significant that large scale production by this process only began at the end of 1912, and that in the early part of 1914 great pressure was put on the Badische Company to increase its output. During the war, owing to the extension of the Haber plants at Oppau and Merseburg, Germany has become independent of foreign countries for her supplies of ammonia and nitric acid, substances indispensable for the manufacture not only of high explosives but also of fertilizers for food production. Without such a process Germany could not have made the nitric acid required for her explosives program, nor obtained fertilizers for food production after the supply of Chile saltpeter had been stopped by our blockade, and it is probable that she could not have continued the war after 1916. In the event of another war we might be cut off from supplies of saltpeter.

"The resources of the German dye industry are of no less military importance. Most of the gases employed toward the end of the war were complex organic substances, none of which had been made previously except in small quantities, and some of which were prepared for the first

time during the war. Gas warfare will undoubtedly continue to develop in this direction, and in the future organic substances will be employed which we do not know to-day. The use of gas will always offer great opportunities for surprise in military operations, and the experiences of the present war have shown that rapid production of a new gas is essential if the surprise is to be effective. Any country without a well-developed organic chemical industry will be severely handicapped in this respect."

CHEMISTS UNITE TO SUPPLY GOVERNMENT WITH TARIFF DATA

Under a simple plan originated by Dr. Bernhard C. Hesse of this city, the various trade and technical chemical organizations of the country are being brought into co-operation with the Federal Government in securing such information and statistics as are necessary in the reasonable consideration of tariff schedules. Behind the plan is a desire to continue and elaborate the informative data published by the Government last year as a "Summary of Tariff Information." These data have been found to be of such importance to the industries with which they have to do as well as to those members of Congress who are called upon to adjust tariff schedules that Dr. Hesse and other chemical leaders felt that co-operation on the part of the chemical industry would redound to its great benefit.

The work planned falls right in line with the idea of Secretary of Commerce Hoover that statistics are need-

ed for the advancement of American industry. The aforementioned Government publication will be used as the basis for the collection of new data. It is expected that most of the contributions will be made by members of the several organizations as a result of consulting the Government data and will represent desirable additions, the correction of omissions or errors therein, if any are found. The plan provides that each organization shall appoint a member as a "receiving station." To him all suggestions for amplifying, deleting, or revising the data in the "Summary" must be sent by the individual members. Periodically the information thus obtained is to be gathered at a central station, studied and forwarded to proper Government officials coupled with appropriate recommendations.

Action has already been taken to put the plan in operation. Communications have been sent to the American Institute of Chemical Engineers, the Manufacturing Chemists' Association of the United States, the American Chemical Society, and the American Electrochemical Society. The last-named has already appointed as its "receiving station," its chairman, Dr. Charles A. Doremus. The other societies have not as yet taken definite action in the matter. Dr. David Wesson, of the American Institute of Chemical Engineers, is, however, strongly in favor of the proposal.

FOREIGN DYES LICENSED BY W. T. B. FOR MARCH IMPORT

Following is a complete list giving the types and quantities of dyestuffs for the importation of which into the United States licenses were granted by the War Trade Board during March. This tabulation is being issued by the American Dyes Institute, and it is announced that anyone interested in the manufacture of dyestuffs who has not received a copy may obtain one by application to that

organization's headquarters, 320 Broadway, New York.

It should be noted that, in addition to the colors listed, there were items licensed for import from England as follows:

Designation of Dye	England (lbs.)
Alizarine Red IP Paste.....	1,000
Anthracene Brown Paste.....	15,000
Coomassie Navy Blue 2RNX....	20,000
Cross Dye Green 2G Conc.....	2,240
Durasol Acid Blue B.....	3,300
Thional Brilliant Green 4GX....	6,800

Total, England 48,340

Designation of Dye	Germany (lbs.)	Switzerland (lbs.)
Acid Cyanine BF.....	500	..
Acid Rhodamine R.....	..	660
Acid Wool Blue R.L....	..	20,000
Algol Brown R Paste....	2,500	..
Alizarine VI Extra Pure.	50	..
Alizarine Black B.....	500	..
Alizarine Blue Black B..	540	..
Alizarine Blue Black BT.	2,000	..
Alizarine Blue SAP.....	..	200
Alizarine Claret R Paste.	50	..

(Continued on page 12.)

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A. P. HOWES, President
LAURANCE T. CLARK, Editor

CONGRESS RESUMES

"We missed our guess; the Senate didn't pass the Dye bill," says Dr. Charles H. Herty editorially in the current issue of the "Journal of Industrial and Engineering Chemistry."

Which provides us with a crumb of comfort, for misery loves company. Not to be outdone in sportsmanship, we seize this occasion to emphasize to our own tolerant circle of acquaintances that as a prognosticator we enjoyed no better luck than the Doctor and others. We were confident that there was enough latent good sense in the august body which has been playing fast and loose with the measure, to insure favorable action before final adjournment—in spite of handicaps and the pressure of last-minute business. But our vision has been sadly out of focus, or else it was a mirage that we saw. At all events, the substance of our prophecy wriggled free from our grasp and escaped into thin air or elsewhere, leaving us with naught but the empty shell; and the Sixty-sixth Congress, passing uneventfully out of existence, remained, up to the very end, quite oblivious to the fact that it was putting us in a terribly embarrassing position—to say nothing of such a relatively unimportant factor as the United States of America as well.

However, if we are game enough to emphasize our amateurish technique as a prophet, we claim the privilege of emphasizing likewise the fact that the legislative mill is again running full time—under New Management. While out on the road drumming up enthusi-

asm and votes, the present foreman stated that "more business in government, less government in business" was to be his guiding motto while in charge. There never was a better time for the adoption of a motto of that sort, nor should there be any delay in proving its worth. Congress has been convened in extraordinary session for the express purpose of doing much that was left undone by its late predecessor, and if any one of the latter's failures stand out more glaringly than the others it is surely the inaction with respect to the country's military and commercial needs as provided for in the Dye bill.

It is believed that although Congress is already at work, it will take at least two months and possibly longer for the new Chemical Schedule, which is to contain the licensing scheme for dye imports, to arrive at a state where it may be presented. Very well then; two or three months' delay can do little more harm than has already been wrought by the twenty-three which have elapsed since the question was first put, and it will give us time to make assurance doubly sure.

There are several ways in which this can be done; but there is only one "best" way. We were only joking before, of course, but now we are in earnest. We want . . . you to write . . . a letter to . . .

But there, Friend Reader, don't make it necessary for us to go through all *that* again!

THE WAR TRADE BOARD

There are few of our readers who do not know what a sudden termination of the authority and activities of the War Trade Board would mean to the still infant American dye industry in the event that Congress should have failed meanwhile to provide it with adequate protection against its foreign foes. But we feel safe in assuming that not so many of them are aware of the exact functions of that body with respect to this and other industries, nor of the various combinations of circumstances under which it may fade out of the picture.

According, then, to a reply to this query addressed to the Secretary of State, the only active license control now exercised by the War Trade Board Section of the Department of State over imports is an individual license control over the importation into this country of synthetic organic drugs, synthetic organic chemicals, dyes and dyestuffs, and all products derived directly or indirectly from coal tar, including crude and intermediate products and mixtures and compounds of such products. This control is exercised under Section 11 of the Trading with the Enemy Act, approved October 6, 1917.

The present powers of the War Trade Board to regulate trade with the enemy are based on the Executive Order of October 12, 1917, issued by the President in pursuance of the authority vested in him by the Trading with the Enemy Act. This act provides that the words "end of war" as used therein "shall be deemed to mean the date of

proclamation of exchange of ratifications of the treaty of peace, unless the President shall, by proclamation, declare a prior date, in which case the date so proclaimed shall be deemed to be the 'end of the war' within the meaning of this act."

In the absence of further legislation by Congress in the matter, the powers of the War Trade Board, it appears, would cease upon the issuance by the President of:

1. An executive order withdrawing the powers vested in the War Trade Board, or
2. A proclamation of exchange of ratifications of the treaty of peace, or
3. A proclamation declaring a prior date as the end of the war.

More than a year ago, when the consummation of official peace seemed imminent, Senator Penrose stepped into the threatened breach with his resolution providing for a continuation of dye import licensing to bridge the gap between "the conclusion of hostilities"

and action by Congress on the Dye bill. To-day, with the new Administration in charge and with the prospect of some little time yet to elapse before the bill can be incorporated with the new Chemical Schedule, the situation of the industry is equally precarious.

Readers need no reminder of the fact that whatever may happen, the state of uncertainty is extremely detrimental to the present welfare of the dye industry, and the future convenience of the consuming industries. Apparently this cannot, for the present, be helped, but the need of making certain that enough of our representatives have been enlisted for active support to insure passage without a lengthy debate and further vexing delays when the measure *does* reach the floor, is daily becoming more urgent.

FOREIGN DYE LICENSES

(Continued from page 9.)

Alizarine Cyanine Green		
G Extra.....	1,540	..
Alizarine Emeraldol G...	71	..
Alizarine Irisole R Pdr...	100	..
Alizarine Red S Powder.	200	..
Alizarine Red W Powder.	500	..
Alizarine Rubinol GEW.	2,200	..
Alizarine Rubinol R....	110	..
Alizarine Safrinol B Pdr..	1,320	..
Anthosine B	100	..
Anthosine 3B	100	..
Anthosine 5B	100	..
Auramine O	2,200	..
Auramine OO	1,540	..
Aurine Soluble in Spirit..	300	..
Azo Acid Blue B.....	1,000	..
Benzo Fast Black L.....	100	..

Benzo Fast Heliotrope		
2BL	200	..
Benzo Fast Scarlet 5BS..	220	..
Brilliant Benzo Violet B.	25	..
Brilliant Germiné L Conc.	100	..
Brilliant Indigo B	2,000	..
Brilliant, Lake M	1,540	..
Capri Blue GON.....	110	..
Chinoline Yellow O.....	50	..
Chloramine Red 3B.....	2,000	..
Chloramine Sky Blue FF		
Conc.	4,000	..
Chlorantine Fast Blue 2GL	4,400	..
Ciba Blue BB Powder...	4,400	..
Ciba Blue 2PD Paste....	5,500	..
Ciba Bordeaux B Powder	440	..
Ciba Scarlet G, 20% Paste	4,400	..
Ciba Violet B Paste.....	770	..
Ciba Violet R Paste.....	3,300	..
Cibanone Black B Powder	2,200	..
Cibanone Orange R Paste	861	..
Cloth Fast Blue R Extra.	11,025	..
Cupranile Brown R.....	440	..
Cutch Brown RR.....	500	..
Cyananthrol BGAOO ...	50	..
Diamine Scarlet 3B.....	224	..
Diamine Scarlet RS.....	44	..
Diazo Bordeaux 7B	25	..
Diazo Brilliant Black B..	25	..
Diazo Brilliant Orange		
GR Extra.....	25	..
Diazo Brilliant Scarlet		
2BL Extra	200	..
Diazo Brilliant Scarlet		
ROA Extra	375	..
Diazo Indigo Blue 2RL..	2,000	..
Diazo Sky Blue 3G	2,000	..
Diazo Sky Blue 3GL	25	..
Erika B Extra	100	..
Erio Chrome Black A....	13,000	..
Erio Violet RL Supra....	1,000	..
Fast Acid Blue B.....	50	..
Geranine G	300	..
Guinea Fast Green B.....	200	..
Helindone Pink BN Paste	110	..
Helio Bordeaux BL.....	300	..
Helio Bordeaux BL Pdr..	250	..
Indanthrene Blue GC Paste	600	..
Indanthrene Blue 3G		
Double Paste	600	..
Indanthrene Blue RSP		
Triple Powder	125	..
Indanthrene Claret B Ex.		
Paste	1,000	..
Indanthrene Golden		
Orange RRT	2,000	..
Indanthrene Pink B Paste	1,000	..
Indanthrene Pink BS		
Powder	50	..
Indanthrene Red BN Ex.		
Paste	600	..

Indochromine T .....	..	1,000	
Indocyanine B	300	..	
Janus Red B	200	..	
Janus Yellow G	200	..	
Meldola Blue 3R Conc...	..	1,000	
Methyl Alkali Blue B...	10	..	
Methyl Lyons Blue .....	..	600	
Naphthol AS	3,661	..	
Neptune Blue BXX	1,000	..	
Neptune Green SBLX ...	10	..	
New Blue RS.....	..	660	
Nigrophor	1,000	..	
Patent Blue A.....	1,000	..	
Pyrogene Cutch 2G.....	..	4,400	
Rhodamine B Extra ....	..	2,160	
Rhodamine 6G	100	..	
Rhodamine 6G Extra ...	478	660	
Rhodamine 6GDN Extra..	342	..	
Rhodamine 6GN Extra ..	22	..	
Saphirol SAP .....	..	4,409	
Solamine Blue FF.....	1,000	..	
Thio Indigo Violet 2R			
Paste	1,500	..	
Thional Yellow G.....	..	4,100	
Trisulfon Violet N.....	..	220	
Turquoise Blue BB.....	10	..	
Ursol 4G	115	..	
Ursol DF	5	..	
Ursol Gray AL	250	..	
Ursol Gray B.....	320	..	
Ursol SDF	100	..	
Ursol SLA	75	..	
Victoria Blue B.....	..	660	
Xylene Light Yellow 2G..	..	2,000	
Totals	41,102	107,905	

WOOLWORTH CO. WINS DECISION ON GERMAN COLOR DUTIES

The F. W. Woolworth Company has won in a decision rendered by the Board of United States General Appraisers reducing the duty on certain paints or colors imported from Germany in metal or wooden boxes. The merchandise in question was classified, on instructions from the Treasury Department, as toys, under Paragraph 342 of the existing tariff law, and duty was assessed accordingly at the rate of 35 per cent ad valorem. After reviewing the evidence submitted at the customs hearing Judge Sullivan summarizes the findings of the board as follows:

"Certain paints or colors in metal or wooden boxes, whether or not val-

ued at more or less than 25 or 100 marks per gross respectively, are properly dutiable as artists' colors or paints, at the rate of 20 per cent ad valorem, under Paragraph 63, and not at the rate of 35 per cent ad valorem, as toys, under Paragraph 342."

Judge Sullivan takes occasion in this decision to point out that the Treasury Department is not authorized by law or legal authority to classify merchandise. He further points out that, price or value alone is not necessarily determinative in classifying merchandise for dutiable purposes. Character and use, the general appraiser emphasizes, must likewise be considered.

Announcement has been made by the Cosmos Dyeing & Printing Works, New York, to the effect that the name of this organization has been changed to the Uhlig Piece Dye Works, Inc., while the capital has been increased to \$600,000.

THE DYEING OF ARTIFICIAL SILK

By T. P. WILSON and M. IMISON

(Concluded from last week.)

No superiority in respect to evenness can be claimed for the products of the German dyeworks. A given dyestuff, whether it be labeled Diamine, Oxamine, Dianol, or Paramine, will be classed as "even" or "uneven," as the case may be, according to its constitution and behavior, which are independent of its German or British prefix. For example, Diamine Sky Blue FF (Cassella), Chlorazol Sky Blue FF (B.D.C.), and Chloramine Sky Blue FF (Sandoz) are all "uneven," as are also Diamine Black BH (Cassella), Oxamine Black BH (Badische), Melantherine BH (Soc. Chem. Ind., Basle), Melantherine BH (Clayton Aniline), and Chloramine Black BH (Sandoz). On the other hand, Sultan Yellow G (B.D.C.) and Chrysophenine G (various makers) are "even," while Cotton Red 4B (Soc. Chem. Ind., Basle), Benzopurpurin 4B (Sandoz), Benzopurpurin 4B (B.D.C.), and Diamine Red 4B (Cassella) are "moderately even."

It has been found, however, that evenness at normal dyeing temperature, 50 deg. Cent., varies according to the molecular weight of the dyestuff used; the arrangement of the groups in the molecule and their nature have apparently no real effect. The dyestuffs of low molecular weight give very even results under normal dyeing conditions, although the silks may vary considerably; while with the same irregular silks the dyestuffs of high molecular weight give uneven results. For example, Rosophenine 10B (mol. wt. 600) is even dyeing, whereas Dianol Sky Blue (mol. wt. 992) is very uneven; Indoine Blue (mol. wt. approx. 521) is very even, but Dianol Fast Pink BK (mol. wt. 944) again is very uneven; Diamine Green B (mol. wt. 812) is fairly uneven, and so on. The result is that fabric made up of artificial silk of varying affinities will show variations in shade when dyed with dyestuffs of high molecular weight and a practically even

effect if dyestuffs of low molecular weight are employed.

The lists given below show the direct cotton colors which have been tested and classified as those showing good evenness, those of moderate evenness, and the uneven ones, determinations having been made by dyeing at 50 deg. Cent. The lists may include the same dyestuff under more than one name, and must for the present be regarded as provisional and subject to alteration as research proceeds. A large number of German dyes which have been tested are not included.

EVEN DYES (DIRECT COTTON COLORS)

Red—Chlorazol Red A, Chlorazol Pink RD, Chlorazol Fast Bordeaux B, Dianol Fast Red K, Dianol Fast Red FG, Congo Corinth GW, Congo Rubine (all British Dyestuffs Corporation), Chloramine Red B, Chloramine Fast Red F (Sandoz), Rosophenine 10B (Clayton Aniline), Rosathrene B, Rosathrene R, Rosanthrene Bordeaux B, Cotton Red C (S.C.I., Basle).

Brown—Chlorazol Brown GR and Dianol Brown GM (B.D.C.). Trisulphon Brown MB and Chloramine Brown 2R (Sandoz), Cupranil Brown B and Chlorantine Pure Brown 3GL (S.C.I., Basle).

Orange—Congo Orange R (B.D.C.), Paramine Direct Orange R (Holliday).

Yellow—Chrysophenine G (Sandoz), Sultan Yellow G (B.D.C.), Cotton Yellow CH (S.C.I., Basle).

Blue—Indoine Blue (Badische; this color dyes artificial silk without a mordant).

Violet—Chlorazol Violet WB (B.D.C.), Direct Violet 2B (S.C.I., Basle).

MODERATELY EVEN DYES

Red—Brilliant Congo Red R (Sandoz).

Brown—Paramine Direct Brown G (Holliday), Dianol Brown 2494 (B.D.C.).

Orange—Stilbene Orange 4R (Clayton Aniline).

Yellow—Titan Yellow G (B.D.C.).

Green—Dianol Dark Green N (B.D.C.).

Violet—Direct Violet 2R (S.C.I., Basle).

Black—Vulcan Black 2GW (B.D.C.), Direct Fast Black B (S.C.I., Basle).

UNEVEN DYES (DIRECT COTTON COLORS)

Red—Direct Fast Scarlet SE (S.C.I., Basle), Chloramine Brill. Red 8B (Sandoz), Dianol Fast Pink BK (B.D.C.).

Brown—Trisulphon Brown B and Trisulphon Bronze B (Sandoz), Cupranil Brown G (S.C.I., Basle).

Orange—Pyrazole Orange G (Sandoz).

Yellow—Dianol Fast Yellow ARX and Afghan Yellow GX (B.D.C.), Paramine Direct Yellow R (Holliday), Oxyphenine R and Oxyphenine GG (Clayton Aniline).

Green—Dianol Green BG (B.D.C.), Direct Green and Direct Green B (Sandoz), Direct Green B (Clayton Aniline).

Blue—Sky Blue FF, Dark Blue B, Blue 2B, Fast Blue G (all makers), and many others.

Violet—Trisulphon Violet B (Sandoz), Direct Violet R (Clayton Aniline), Chlorazol Violet BN, Dianol Violet R9068K, and Dianol Violet R (B.D.C.), Direct Violet N (S.C.I., Basle).

Black—Black BH (all makers), Chlorazol Black E Extra and Dianol Black No. 1 (B.D.C.), Chloramine Black HW and Chloramine Black E Extra (Sandoz), Melantherine TH and

Indigene Black BW (S.C.I., Basle).

From these lists it is apparent that there are many direct cotton dyestuffs which when employed in the usual manner will give unsatisfactory results if there is any unevenness in the artificial silk; but, on the other hand, a considerable number will give good and even shades in most colors. The work of investigation into the evenness of dyestuffs is still in progress, but up to the present only one or two satisfactory direct blues have been found, and for most blue shades other methods must be adopted to ensure more even results. It may, however, be possible now that the test of evenness has been ascertained, for manufacturers to produce blue dyestuffs of low molecular weight, and investigations have been started with this end in view.

It has been found, moreover, that it is possible by dyeing at other temperatures to obtain more even results with dyestuffs which, when tested at 50 deg. Cent., were classified as uneven. With higher temperatures of the dyebath, the amounts of dye absorbed by two silks of very different affinities gradually approach one another, so that whereas when dyed at 45 deg. Cent. one silk might be six times as dark as the other, when dyed at 75 deg. Cent. there is very little difference between them; the silks, of course, were immersed in the bath at the proper high temperature and not put into a cool bath and subsequently heated.

When using mixtures of direct cotton dyestuffs even results can only be obtained if all the dyestuffs in the mix-

ture are even; a dyebath composed of both even and uneven dyes almost invariably gives worse results than the uneven dyes alone. It has also been found that when material dyed with an uneven dye and showing variation in shade is bleached and afterwards re-dyed with an even dye, the final result will frequently be uneven.

It has already been stated that some of the sulphur colors will help to supply the deficiencies in the direct colors. The sulphur dyes as a class cannot, however, be said to give even results, as many of them do not; but it is fortunate that among the blue sulphur colors some have been found which give even shades on artificial silk of varying affinity. It is possible, therefore, by the use of these to extend considerably the range of colors which do not show unevenness, and the following dyestuffs can be recommended to this end.

EVEN DYESTUFFS (SULPHUR COLORS)

Thionol Sky Blue PX (B.D.C.), Pyrogene Direct Blue RL, Pyrogene Direct Blue (green shade), and Pyrogene Indigo (S.C.I., Basle), Thionone Brilliant Blue G and Thionone Navy Blue B (Holliday).

The sulphur colors named below have been found to give uneven results.

UNEVEN DYES (SULPHUR COLORS)

Blue—Thionol Navy Blue R, Thionol Navy Blue 9055K, Thionol Direct Blue S (B.D.C.), Thionol Dark Blue S and Thionol Dark Blue RL (Sandoz), Thionone Indigo R and Thionone Navy Blue 2R (Holliday).

Black—Thionol Black OG, Thionol Black XXN Conc., and Thionol Black SGG (B.D.C.), Thionone Black Paste (Holliday).

Green—Thionol Green DY (B.D.C.), Pyrogene Green 3G (S.C.I., Basle), Thionol Brill. Green 2G (Sandoz).

Brown—Thionol Brown O (B.D.C.).

The basic colors find considerable application on artificial silk where great fastness in the dyed silk is not essential. In addition to producing extremely bright shades, basic dyes as a class pos-

sess the great advantage of giving the most even dyeing results. In fact, almost without exception these colors can be made to give shades which show no sign of unevenness when used to dye artificial silks of very different affinities. It should be noted that these dyes are of low molecular weight.

With the usual method of dyeing—*i. e.*, with a preliminary mordanting with tannic acid and tartar emetic—unevenness may, as stated above, sometimes result, but to a much smaller extent than with many of the direct colors. The most even results are to be obtained by dyeing first in a neutral dyebath, and then fixing in tannic acid and tartar emetic.

The fact that basic colors are, on the whole, even dyeing enhances their value for topping direct or sulphur colors, and extends the range of shades which can be produced, and which might be curtailed by the reduction in the number of dyes available if only those which fulfil the requirements of even dyeing are to be used.

It has been found that among all classes of dyestuffs investigated there are some which under normal conditions of dyeing exhibit great sensitivity to variations in artificial silk, and special methods have been indicated for dyeing with some colors which tend to make them less sensitive. On the other hand, there are many dyes of undoubted even dyeing properties covering, in one class or another, a full range of colors; and it is hoped that the extended use of these, and the restricted or more careful use of uneven colors, will tend further to eliminate irregularities in dyed viscose silk.—*J. Soc. Chem. Ind.*

M. Ungerleider, formerly with the Central Dyestuffs & Chemical Company and more recently with the Standard Color Company of Boston, is now connected with the National Chemical Products Company, 135 William Street, New York.

The University of Buffalo, Buffalo, N. Y., will build a three-story chemistry building at Niagara Falls Boulevard and Main Street to cost about \$400,000.

LIKES AMERICAN DYES BUT ASKS MORE UNIFORMITY

The following statement from Jules A. Kerle, general manager of Firth & Foster Company, Philadelphia, dyers and finishers, was published in a recent issue of the Philadelphia "Public Ledger":

"I believe I cannot do better than to preface my discussion with mention of an episode which was related to me recently, and which exemplifies the situation. An American woman visiting in Paris last fall happened to be wearing a velour coat of American make and dye. She was asked by a French manufacturer if the coat was French, and when she replied that it was made in this country the manufacturer declared that he had not thought it possible to produce such a piece of goods here.

"Indeed, this certainty of the inferior quality of American dye goods was a customary thing in the past, and is only beginning to be changed.

"Piece dyeing is being used to-day to a greater extent than ever and it has shown a remarkable increase in the United States, until it is at the present time a big factor. During this period of extensive increases in the dye industry here the dyers have been instrumental, if not the greatest force of all, in helping the textiles to develop to a point to-day where they can compete with any foreign product and where Americans can proudly claim that their goods are up to the best of the imported goods, if not superior.

"While the industry is still suffering somewhat from the lack of the best dyes, we cannot but acknowledge that the drug and dye producers of America have made great progress, and it is the universal hope that, through gradual improvement they will be able in a short time to put on the market concentrated dyes leaving nothing to be desired. These, I may explain, have reference to the fast colors for wool as well as cotton and silk.

NEED OF UNIFORMITY

"We cannot impress too firmly on the minds of the dye manufacturers the necessity of producing concentrated dyes which will be reproduced in every shipment sent out by them. At the present time the dyer cannot tell when he receives a shipment of dyes what luck he will have. One barrel is likely to have a dye of an entirely different concentration from another, and through this discrepancy he may ruin quantities of his most valuable work.

"If the dyer can be assured positively of the uniformity of his dye shipments he will know exactly what percentage he has to use, and will thus avoid loss of time and effective work. The standard of dyes must be uniform, and until the makers of dyes realize that fact one serious element in the dye industry will still have to be confronted and remedied.

"And, in direct line with this fact, it cannot be denied that until such uniformity and standard of excellence are assured there will still be just claim for superiority of foreign goods, and America's just place in the world market will continue to be protested and disputed.

"The public is very apt to think of manufacturers when looking at a piece of wearing apparel, and so forgets the important fact that the dyer is a distinct factor, and a very important one, of the textile industry, a part which means practically the

making or breaking of a sale of fabric.

"As a matter of fact, very much if not everything depends on the dyeing and finishing of every piece of cloth put on the market. The dyer's work has a close bearing on the occupations of the weavers, the spinners and other textile workers. Both the public and the members of the industry as a whole should realize just how important a cog the dye workers form. Then, too, the Government ought to sustain any reasonable demands of this industry, so that this branch can make progress and become a leader in world trade, which would in turn mean success and progress for all the textile industry.

"Only by such co-operation and such understanding of the necessity for encouraging and assisting this great, giant, growing industry can the portended competition of European countries, some of which formerly controlled the situation, be forestalled."

The British Dye Licensing Committee states that bona fide samples of any products restricted under the Dyestuffs (import regulation) act, 1920, will be allowed to be imported free of license. The committee refuse to state a definite maximum weight for such samples, but members may be guided in this matter from the fact that under the old restrictions samples up to one pound in weight were allowed in free.

The German aniline trust has bought an electro-chemical works in Bitterfeld,

producing chloride, caustic soda and calcium carbide. The works were valued at more than 100,000,000 marks.

With a capital of \$125,000, Keiner & Co. have been incorporated under the laws of New Jersey to manufacture and deal in chemicals, and especially in tanners' dyes and finishes. Jacob Lubetkin is named as agent and headquarters will be in Newark. The incorporators consist of Erich G. Keiner, Irving Wilner and Jacob Lubetkin.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF AMERICAN DYESTUFF REPORTER.

Published weekly at New York, N. Y., for April 1, 1921.

State of New York, County of New York, ss.: Before me, a notary public in and for the State and county aforesaid, personally appeared Alfred P. Howes, who, having been duly sworn according to law, deposes and says that he is the publisher of the American Dyestuff Reporter, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the name and addresses of the publisher, editor, managing editor and business manager are:

Publisher—Alfred P. Howes, 4109 Woolworth Building, New York City. Editor—Laurance T. Clark, 4109 Woolworth Building, New York City. Managing Editor—Laurance T. Clark, 4109 Woolworth Building, New York City. Business Manager—Eugene C. Mayer, 4109 Woolworth Building, New York City.

2. That the owners are: Howes Publishing Co., Inc., 4109 Woolworth Building, New York City; Alfred P. Howes, 4109 Woolworth Building, New York City; Mary K. Howes, Northampton, Mass.; William F. Collins, Upper Montclair, N. J.; Derfla H. Collins, Upper Montclair, N. J.; N. H. Hiller, Carbondale, Pa.; Jos. L. Schroeder, Hartsdale, N. Y.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustee, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

Alfred P. Howes,
Publisher.



AMERICAN DYESTUFF REPORTER

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Apr. 18, 1921



THIS ISSUE IS THE APRIL
EXPORT NUMBER

**The Bearing of a Synthetic
Dye Industry upon Our
National Welfare**

An Address by Dr. Marston
Taylor Bogert

The President's Message

An Editorial

Foreign Trade Opportunities

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

New York, April 18, 1921

No. 16

THE BEARING OF A SYNTHETIC DYE INDUSTRY UPON OUR NATIONAL WELFARE

An Address by
DR. MARSTON TAYLOR BOGERT

IN presenting his "History of a Crime" to the public, the great Victor Hugo wrote, we believe, one of the shortest prefaces to a historical novel on record. Here it is, complete:

"This book is more than timely; it is needed.

"I publish it.

"V. H."

And if we were obliged to keep our introduction to Dr. Bogert's address within the shortest possible space we believe we could not do better than to choose almost the same words—or, better, to paraphrase somewhat in the following fashion:

"This address was more than needed; it contains potent ammunition. We reprint it.

"A. D. R."

Unfortunately, we cannot get it all into one issue and have room left over for anything else. It was delivered by Dr. Bogert before a meeting of the Franklin Institute of Philadelphia and is published in the April issue of the "Journal of the Franklin Institute," from which the American Dyes Institute is reprinting it in the form of a

bulletin. Ever since the subject of the licensing system for the protection of the American dye industry began to be agitated we have deplored the fact that there was not more in the way of authoritative writings dealing with this subject and the great need for action on the part of Congress. There have been notable contributions, it is true, yet they have not come so close together but that oftentimes, week after week, we have been obliged to inflict upon patient readers our own poor efforts for lack of something better. Other publications have likewise hampered away consistently; nevertheless it has been painfully apparent to The REPORTER, and, we believe, to others, that the number of sources of fresh material was not nearly great enough to produce the desired effect. One wearies of reading, week after week and month after month, the attempts of the same set of individuals to serve up in different ways the same set of ideas, no matter how sound and important those ideas may be.

Of late, however, that which we ardently hoped for has been taking place, and the number of strong contributions

to the cause from those well qualified to participate actively in the battle is increasing by leaps and bounds, and thus the past few weeks have seen us privileged to help pass along the able testimony of Joseph H. Choate, Jr., Robert Mountsier, Major V. LeFebure, General Mitchell and others—not forgetting Dr. Bogert's Wilmington address, "Science and Disarmament." And since, as we have set forth before, we regard it as part of our duty to aid not only in placing these notable efforts on record but in securing for them the widest possible circulation, we continue to feature them and shall continue until Congress makes it no longer necessary to ask for that which should have been given as a matter of course nearly two years ago.

Dr. Bogert needs no introduction here, yet it may not be out of place to mention that, in addition to being Professor of Chemistry at Columbia University, he was formerly President of the International Chemical Society, succeeding Sir William Ramsey and being succeeded to that office by Sir William Crook. Also, he served two terms as President of the American Chemical Society.

He organized the Division of Chemistry and Chemical Technology of the National Research Council, with its thirty-two sub-divisions, and remained as its Chairman until he entered the army. He was appointed a Lieutenant-Colonel, serving as Chief of the Chemical Service Station and as Acting Director of the Gas Service in this country until the organization of the Chemical Warfare Service under General Siebert. He was then promoted to a Colonelcy and remained in the army until honorably discharged in May, 1919.

The first instalment of his Philadelphia address follows:

INTRODUCTORY

Statistics show that one out of every 1,500 of our population is totally blind. The other 1,499 of us are at least partially so. The one pathetic figure is

doomed to complete his pilgrimage in utter darkness, forever excluded alike from the contemplation of what man has wrought through the centuries and from the enjoyment of all those matchless beauties of nature with which the Creator has so lavishly adorned this infinitesimal speck in His boundless universe. The other 1,499 of us travel through life under the impression that we see everything around us. Yet are we blind in some one or in many important respects, for the layman is ever blind to the visions which open out before the imagination of the expert in any line of human endeavor. We cannot hope to see the picture with the eye of the artist, the building with the eye of the architect, or nature with the eye of the naturalist. In such matters our blindness may be but partial or nearly total.

Thus the public still fail to see clearly the bearing of a well-developed and diversified synthetic dye industry upon our individual and national welfare, and how vital it is to our progress and prosperity, or legislation would long ago have been enacted to protect and stimulate our domestic effort in this field and to safeguard it against threatened overwhelming by foreign dumping and competition.

To those who would raise the bogey of an American dye trust, I would reply that there is ample room in our country for small as well as large manufacturing units in this industry, as in the steel business for example. The existence of the U. S. Steel Corporation has not put the independent operators out of business, nor been to the disadvantage of the community.

But in world commerce, as in a world war, there is but one rational method of attack, and that is with an organization of a size and power commensurate with the undertaking. To attempt otherwise will be as futile and as disastrous as were the efforts of the allies to fight the German war machine with a number of separate and insufficiently co-ordinated armies. The greatest and most powerful of Germany's industrial combinations is her giant dye combination.

This huge consolidation has already called for additional capital, the life of the trust has been extended from the year 1966 to 2000, and its dissolution made more difficult by requiring a four-fifths instead of two-thirds majority vote of the participating firms to unscramble it. Further, the Haber nitrogen fixation industry, with an authorized capitalization of half a billion marks, has been placed under the jurisdiction of this same dye trust. Control of the nitrogen supply means direct control of all explosives and of one of the most important constituents of all fertilizers, as well as indirect domination of many other industries. To compete in the world's markets with this giant organization, with the largest and finest equipment in the world, as the result of forty years of intensive effort by thousands of eminent chemists and engineers, certain of our legislators appear to advocate a policy which will make it impossible for us to form any combination equal to the struggle. We

have far less to fear from any American combination, the regulation of which is, after all, in our own hands, than from foreign domination of our industries, a control which Germany is now seeking to acquire, and toward which goal she is driving with characteristic thoroughness, persistence and concentration. Our grave danger lies in our failure to apprehend the deadly character of this menace to our safety, and in the short-sighted opposition of those textile manufacturers who cannot see that it is to their own selfish advantage to foster and encourage an American dye industry. If Germany once gains the upper hand in this key industry, we shall ultimately become a subject nation, for, as Lincoln said, "no nation can long exist half slave and half free."

A FEW ILLUSTRATIONS

What, then, is this synthetic dye industry that it is of such peculiar impor-

tance? Aside from the familiar uses of dyes themselves for coloring our flags, uniforms, clothing, and other fabrics, leather, paper, feathers, wood, and many other materials, are there other directions in which this industry ministers to the welfare of mankind and the progress of civilization? Let us look into the matter somewhat more closely to find the answer to this question, and incidentally to gain a better appreciation of what it really covers.

When textiles, for example, are treated with solutions of certain chemicals, the fiber is permeated and penetrated and a more or less brilliant color imparted to it. The fabric so colored is said to be "dyed," and the material producing this effect is therefore known as a "dye" or "dyestuff." If the dyeing has been carried out properly the fabric will be colored evenly throughout, and it will be impossible to remove the color by washing or by other solvents.

Painting, on the other hand, is merely a superficial coating of an article with a colored substance, termed a "pigment," suspended in a suitable liquid "vehicle." Almost any colored substance may serve as a pigment, and various dyes which combine with mineral salts to highly colored solids, called "lakes," are extensively used for this purpose, in addition to the more common mineral pigments not lakes. The usual vehicle for paints is linseed oil, since this on drying gives a tough weather-proof skin, retaining the pigment as an even coating.

Many of these dyes and lakes also form the basis of inks and ink powders.

Dyes are often divided into natural and artificial. The dyes of our ancestors were all natural products, and the proposal to manufacture artificial dyes was received with amusement and scorn, as though man-made products could ever hope to displace nature's greatest coloring agents, like madder and indigo. The more pious of the community even referred to such undertakings as sacrilegious. Nevertheless, the chemist patiently continued his investigations and was soon able to

show clearly that it was only certain constituents of the plants which possessed this tinctorial power and that the rest was either wholly useless or even objectionable. Then came the synthesis from anthracene of alizarine (in 1868), the active tinctorial constituent of madder, which was soon followed (in 1870) by the synthesis of indigo from benzole.

Chemistry has not only determined the actual tinctorial constituents in many natural dyes and reproduced them artificially, but it has also shown the way to prepare tens of thousand of other dyes which, so far as we are aware, are not found in nature. Compared with the industry of the artificial dyes, that of the natural dyes is to-day relatively insignificant. Long and patient study of the intimate chemical nature of these synthetic dyes has enabled the investigator to determine in most cases the particular combinations of atoms upon which this tinctorial power depends and the effect produced upon the shade by the alteration of these groups or the insertion of others, so that the expert can now tell in advance, if shown the molecular formula or structure of the dye, just what color it is likely to produce upon cloth. The chemist has succeeded in producing artificial dyes of every conceivable shade of the rainbow, at such a low price, of such purity, fastness and beauty, that the natural dyes either have been driven from the market, or the best of them (like alizarine and indigo) are now made synthetically. Logwood is the most important exception to this, although small amounts of gambier, turmeric, orchil, Persian berry extract, saffron, madder and other natural dyes are still imported. The total value of the natural dyes imported in the year 1919 was \$1,247,188, while the artificial dyes and color lakes made in this country the same year were worth \$71,778,819.

Practically all of the artificial dyes are prepared synthetically—i. e., built up step by step from simpler substances, somewhat as one might erect a house by laying a suitable foundation and then constructing the different stories

upon it one at a time—and they are hence properly designated as “synthetic dyes,” synthesis being the reverse of analysis.

This is simply and quickly demonstrated by the production of a dye from two colorless substances (Naphthol Orange); or, by heating together salicylic acid and wood alcohol, in presence of a little sulphuric acid to assist the reaction, a wholly new compound results, identical with the main constituent of the natural oil of wintergreen and the one to which it owes its characteristic odor and taste, and which is therefore known as the synthetic oil of wintergreen. These are typical syntheses. To prove that natural oil of wintergreen really is a combination of the two substances stated, it can be heated with caustic soda solution, which treatment resolves it again into salicylic acid and wood alcohol. This is an analytical process; in this particular case called a “proximate” analysis, because each of the two substances obtained can be broken down into still simpler substances by suitable treatment.

The vast bulk of our synthetic dyes are all built up from five simple initial materials, the so-called “crudes,” which are familiar to all of you. They are the following: Benzole, toluene, naphthalene, anthracene and carbolic acid. Five others, less common but which yield a number of important dyes, are xylene, methyl anthracene, phenanthrene, cresylic acid and carbazole. all of these ten crudes are found in the tar obtained when coal is heated for the production of illuminating gas or for the manufacture of coke, and as this material constitutes their chief source, the resulting dyes are generally known as “coal-tar dyes,” and this appellation has been extended so as to be synonymous with “synthetic dyes,” irrespective of whether actually made from coal tar or from crude obtained from other sources.

These crudes, then, represent the foundations upon which we can build an endless variety of structures, of one or several stories. The building operations of the chemist differ somewhat

from those of the contractor erecting a house, in that the chemist ordinarily puts up his structure one story at a time, each one being complete in itself, and it may be that he will run it up ten or fifteen stories before putting on the roof. At many of these intervening stages it is entirely possible for him to change his mind and complete the building as a drug, a photographic developer, a perfume, or something else instead of a dye. These intermediate products, therefore, standing as they do midway between the crude initial materials and finished products, are known conventionally as “intermediates,” and from our ten crudes approximately 300 intermediates are manufactured commercially for the production of the 1,000 synthetic dyes now found in the world's markets.

According to the recent census conducted by the U. S. Tariff Commission for the year 1919, there were 214 manufacturers of dyes and intermediates, 116 concerns engaged in the manufacture of

(Continued on page 12.)

AMERICAN DYESTUFF REPORTER

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Pointed solely toward the welfare and growth of the American Dyestuff Industry. Unbiased contributions appreciated.

A. P. HOWES, President
LAURANCE T. CLARK, Editor

THE PRESIDENT'S MESSAGE

Nowhere throughout the length and breadth of his first message to Congress does President Harding make mention of the Dye bill; neither does he even by implication refer specifically to the dye industry nor more generally to the coal-tar chemical industries, nor in the most casual and general way to the united chemical industries of this country taken as a whole. And considering the definite and specific role which these allied industries are to play during the next four years, together with all other circumstances of time, place and the President's expressed beliefs, this omission would seem to indicate that there still remains a blank space in our national consciousness as personified by the newly installed administration—and furthermore we hold this to be so self-evident to any reader of *The Reporter* as to require no demonstration in these columns.

Are we presuming, then, to quarrel with and look for minor flaws in the earnest and carefully worked-out production of one a thousand times better fitted to view and express conclusions about national affairs than we? Hardly. Despite the fact that many avail themselves of every citizen's undisputed right to seize upon the Chief Executive's utterances and say: In this he is right, in this wrong, we are in no way minded to court charges that we are afflicted with a similar brand of conceit, and prompt denials of any such insinuations may be obtained upon application to this office

(enclose stamp). Our presumption merely carries us as far as the comparatively modest contention that the dye industry—or better, the coal-tar chemical industries—have not as yet, after considerable striving, assumed their proper importance as a concern of the Government, and that this importance is quite great enough at the present time to render them not out of place in a Presidential Message.

Back in 1914, when the knowledge of most of us concerning these industries was not the knowledge of to-day and the issues which now hang upon its welfare were little suspected, it would have seemed rather absurd to single out the dye industry for mention in so necessarily broad a document; and even in the present, were it not for its "key" character and the potentialities which lurk within it, such conspicuous notice, perhaps, would be equally unwarranted. But the developments of the war have given it a weight vastly disproportionate to its actual size and the amount of capital invested, have placed it shoulder to shoulder in importance with the Army and Navy.

Mr. Harding was a member of that Senate majority which abjectly obeyed Boies Penrose's orders to let the Dye bill wait until all the "pop-gun tariff bills" could be considered together—a lamentable intrusion of politics upon national welfare which ought never to have been permitted by those capable of making an official protest—and as such he had the facts laid before him, together with the highly significant occurrences of a normally low-tariff President thrice going out of his way to recommend prompt action leading to drastic protection. But since the message was evidently not delivered clearly enough to arouse the greater number of his colleagues—though how the Nugent, Frelinghuysen and Watson speeches could fail of their purpose is puzzling—it is by no means just to blame him if he has not yet absorbed the full story. Again, we should not presume; we say this in all sincerity and without the implied "tongue in the cheek"

manner in which we are sometimes wont to indulge. Harding the President is a different personage altogether from Harding the Senator, as many will soon find out. He has been invested with an authority and a power which is probably greater in its actual effect than that of any other nominal government head in the world to-day, and certainly far greater than that which he exercised as a member of the Senate. He has stepped from the ranks into the leadership of his party. Under such circumstances one may well expect him or any man to expand to the full extent of his capabilities.

What those capabilities are he apparently will not be slow in revealing to us. For if the substance of a Presidential Message must consist in the main of generalities, our new President has not hesitated to be very specific on such points as he believed to be of paramount importance. And if he did not include the coal-tar chemical industries in this list, at least his

remarks on questions which have a general bearing on the policy which he may be expected to follow with regard to them, contain much in the way of encouragement.

On the subject of disarmament, he declares that the burden of heavy military forces should be removed from the people of the world, but that while "we are ready to co-operate with other nations to approximate disarmament, . . . merest prudence forbids that we disarm alone." He also serves notice on other governments as well as our own that our attitude in maintaining proper defenses "can carry no threat after the latest proof of our unselfishness."

With this expressed belief as a guide to his sentiments, we may well conclude that the ultimate realizations of the ability of the coal-tar chemical industries to enable us to proceed a long way in the direction of curtailing military expenses, would be received by him with no little satisfaction, and that his hearty support

would be assured for any measure calculated to bring about, to such a degree, his wishes, without endangering the safety of the country.

Passing over his sound ideas on the encouragement of aviation as a factor in our commercial and military preparedness, one finds him likewise holding very definite views as to the safeguarding of our industries. "I believe in the protection of American industry," he says, "and it is our purpose to prosper America first."

Again: "The privileges of the American market to the foreign producer are offered too cheaply to-day, and the effect on our own productivity is the destruction of our self-reliance, which is the foundation of the independence and good fortune of our people. Moreover, imports should pay their fair share of our cost of government."

Surely this augurs well. Here's another pointed paragraph: "One who values American prosperity and maintained American standards of wage and living can have no sympathy with the proposal that easy entry and the flood of imports will cheapen our costs of living. It is more likely to destroy our capacity to buy."

Further: "We offer, essentially unprotected, the best market in the world." Indeed, if this does not refer specifically to our dye market, the facts in the case of the latter should gain easy access to our President's interest and understanding. And finally, we come to: "There is little sentiment in the trade of the world.

Trade can and ought to be honorable, but it knows no sympathy."

And so, while it may be that the role of the dye industry has not yet come as fully to the attention of a man beset by numberless demands upon his time as it will assuredly come a little later, it seems to be equally evident that when it does the industry can count upon the full weight of his influence and support.

THE DYE INDUSTRY AND NATIONAL WELFARE

(Continued from page 9.)

intermediates, and 155 in the production of finished dyes and other synthetics, 90 of them turning out only dyes (63,402,194 pounds, valued at \$67,598,855).

Those engaged in other lines than dyes were as follows:

	Pounds Mfd.	Value of Output
Color lakes—		
34 firms.....	2,569,921	\$4,179,964
Medicinals—		
31 firms.....	6,777,988	7,883,071
Photochemicals—		
10 firms.....	335,509	1,059,340
Flavors—		
9 firms.....	610,825	1,318,654
Phenolic resins (5) and tannins (1)		
6 firms.....	3,794,534	2,381,358
Perfume—		
6 firms.....	41,419	164,302

Considerable progress was recorded in the United States dye industry during 1919. The list of intermediates was augmented by 76 not previously manufactured here, bringing our total up to 216, and there was a considerable increase in the output of the higher grade ones. In the quality and quantity of finished dyes, there was also a gratifying growth as compared with 1918, the total production being 38 per cent greater in amount than our total imports of dyes for the fiscal year 1914. In fact, we have ourselves already become exporters of dyes, our exports for the nine months ending September 30, 1920, having

been valued at \$26,032,389, which exceeds the total value of dyes imported during the fiscal year 1914. Of this amount \$17,038,235 represented aniline dyes, \$2,321,090 logwood extracts, and \$6,673,064 other dyes. To be sure, an important factor in this achievement was the absence of foreign (especially German) competition, but it shows none the less the rapid strides made in the development of our domestic industry.

Our 216 intermediates in 1919 were derived from the following crudes: benzole = 55, toluene = 47, xylene = 4, naphthalene = 66, anthracene = 10, carbolic acid = 26, other crudes = 8.

(To be continued.)

CHEMISTS TO WELCOME MADAME CURIE

Chemists of New York are preparing to welcome Madame Curie, discoverer of radium, who is expected to arrive in this country from Europe early next month.

It has been decided to have a luncheon in her honor on May 17 at the Waldorf Astoria. The organizations which will join in doing honor to the distinguished woman scientist are: the New York Section of the American Chemical Society, the Chemists Club, the New York branch of the Society of Chemical Industry, the American Electrochemical Society, and the Societe de Chimie Industrielle, American Section.

Madame Curie is coming to this country to receive the gift of a gram of radium, to be presented to her by a committee of American women in recognition of her distinguished services to science.

The chemists who will take part in the luncheon are representative of their profession in New York City and the neighborhood. There will also be women guests.

The Committee on Arrangements consists of Dr. Edgar F. Smith, representing the American Chemical Society; Dr. Colin G. Fink, of the American Electrochemical Society; Dr.

George F. Kunz, of the Societe de Chimie Industrielle; Dr. S. R. Church, of the American Section of the Society of Chemical Industry, and Dr. J. E. Zanetti, of the Chemists Club.

NATIONAL ANNOUNCES ERIE FAST ORANGE A

This color is the latest addition to the series of direct dyes produced by the National Aniline & Chemical Company, Inc., and places in the hands of dyers a desirable product for both self and compound shades on cotton, producing shades from a bright, fiery orange, to a delicate salmon, as well as being useful for other materials.

"National" Erie Fast Orange A is particularly fast to light, washing, and perspiration, besides possessing the excellent qualities of easy solubility and level dyeing, which latter feature will commend its use in machine dyeing, whether in the jig or pad.

It is recommended for the dyeing

of mercerized cotton; for covering cotton and artificial silk effects; for general union goods dyeing; for paper staining; for jute, straw and chip dyeing; and for coloring both chrome and vegetable tanned sheepskins. On both weighted and unweighted silk, shades are produced that are fast to light and alkalies.

It is expected that "National" Erie Fast Orange A will occupy a prominent place in the dyehouse on account of its excellent qualities and general adaptability.

RESIGNS N. C. TEXTILE SCHOOL INSTRUCTORSHIP TO ENTER BUSINESS

G. E. Bush has resigned his position as Instructor in Carding and Spinning at the North Carolina Textile School to accept a position in the Fabric Department of the Firestone Tire & Rubber Company, Akron, Ohio. Mr. Bush graduated from the school, which is a department of the North Carolina State College, in 1919, and was awarded the Students' Medal by the National Association of Cotton Manufacturers.

Maurice Hendrick, who has recently been promoted to the post of general superintendent of Cliffside Mills, Cliffside, N. C., is also a graduate of the Textile School and was awarded the Students' Medal. Mr. Hendrick graduated in 1908 and has been assistant superintendent of these mills for a number of years.

To manufacture and deal in power and chemical equipment, the Power & Chemical Equipment Company has been incorporated under the laws of New Jersey. Headquarters will be

in Hoboken and the capital is \$100,000, although business will be started with \$1,000. The incorporators are Edward D. Gross, John J. Marnell and Francis T. Morgan, all of Hoboken.

INFLUENCE OF MOISTURE ON SHADE

Variations Due to the Hygrometric State of Material

By J. ROUFFIN

All dyers have noted that dyeings with some coloring matters are modified by heat, usually the shade is reddened. Yellow shades appear more like orange, and orange shades more on the scarlet side. This alteration of the shades takes place slowly. In most instances, the lapse of a couple of hours will be required before the return of the original shade.

It has also been observed that the modification of the shade depends largely on the nature of the coloring matter employed; some are extremely sensitive to heat, and others not at all. When using those that are very sensitive to heat, precautions should be taken in the course of matching off. Samples taken from the dyeing should only be dried at a high temperature when it is desired to ascertain quickly the state of progress of the dyeing. The final matching needs to be accomplished with more precaution.

As to the cause of the phenomenon, the opinion generally held is that it is due to a specific action of the heat on the coloring matter. This interpretation is, however, open to doubt for the following reasons: (1) The shade

changed by heat only returns slowly to its initial tone long after the temperature of the material has fallen to that of the surrounding atmosphere, and (2) the color of the material as it leaves the boiling liquor is the same as that of a wet but cool pattern from the same batch, and in both cases the color is different from that of a dry and cold samples, but the difference is in the inverse sense from the variation produced by heat.

It appears reasonable, therefore, to suggest that the variation of the shade may be directly due to the hygrometric state of the material. In attempting to verify this hypothesis, samples of woolen felt dyed with different coloring matters were taken and cut each into three parts. One lot was placed in a desiccator holding a vessel of concentrated sulphuric acid; that is, in a dry atmosphere, where the wool would have the moisture taken from it progressively at the ordinary temperature until completely dry. Another lot was placed in a desiccator holding a vessel of pure water; that is, in an atmosphere saturated with moisture, where the wool would absorb progressively, and without being heated or cooled, the maximum amount of water it is able to carry. The third lot was kept in the air of the room.

The results have confirmed the hypothesis advanced. In the dry atmosphere the colors became modified in the same manner as takes place by drying them in the dry-room. In the moist atmosphere the colors became modified to the same extent as a wet cold pattern. The experiments were repeated with a large number of the acid and chrome dyestuffs for wool, and in each instance the immediate cause of the alteration of the shade was the hygrometric state of the fiber.

Heat only intervenes as a moisture-removing agent. That the return to the original shade takes place slowly may be explained by the fact that time is required for dried wool to resume its normal hygrometric state. As has already been stated, many coloring matters are very sensitive to heat, some

others are hardly affected at all, while others are most profoundly affected. One coloring matter may furnish a bluish green, which, on material in the moist condition, will appear to be quite green, and which passes to blue by desiccation.—*L'Industrie Textile*.

ATLANTIC YELLOW R NOW ON MARKET

Atlantic Yellow R, a clear reddish Sulphur Yellow of standard properties, has just been put on the market by the Atlantic Dyestuff Company.

The Company states that with the addition of this Sulphur Yellow to their present line of this class of colors, the need for further importation of Sulphur Yellow from abroad should be materially lessened.

NATIONAL ISSUES "DYES FOR PAPER," SHOWING 144 COMPLETE DYEINGS

The National Aniline & Chemical Company never does things by halves, and in issuing its latest color book,

"Dyes for Paper," it maintains in splendid fashion its practice of offering to the purchaser not only a wide range of materials to work with, but likewise the highest degree of service and co-operation in securing results. Again it calls to mind the fact that one of the highest cards in the Germans' erstwhile invincible deck was the service which the consumer could buy along with his colors, and that our American dye manufacturers have not been slow to see the necessity of duplicating their performance in this respect.

The new color card, which is believed to be one of the most complete for paper ever distributed in this country by any dye concern, consists of nine panels, each containing sixteen samples illustrating a wide range for use on bleached sulphite, unbleached sulphite and kraftstock, and on stock containing 75 per cent ground wood and 25 per cent unbleached sulphite. The range includes some fifty-two colors, and in all 144 complete dyeings are shown. On the bleached sulphite there are shown twenty-four colors, ranging through the different shades of yellow and orange to the scarlets, blues and violets. On the unbleached sulphite there are also twenty-four colors shown; on the mixed ground wood and unbleached sulphite there are sixteen, and the effects obtainable on kraftstock are illustrated by sixteen more.

The colors are divided into acid, basic and direct, and each sample is plainly marked "A," "B" or "D" to show in which classification the color belongs. Each color for use on any of the designated varieties of stock is illustrated by two dyed samples showing respectively the effect produced by one and five pounds per

1,000 pounds of bleached sulphite, kraftstock, etc., as the case may be, except in such instances where deeper shades are wanted, when the same proportions are maintained by showing the result of two and ten pounds, and five and twenty-five pounds per 1,000 pounds of stock. Brief descriptions of the general characteristics of the acid, basic and direct colors on paper, hints on dyeing, together with special data on Cotton Blue B, Wool Yellow Ex. Conc., Erie Red 4B, Erie Congo 4B and Metanil Yellow 1955, preface the display of samples.

The new card is uniform with the other color cards of the National Company—a feature, it goes without saying, to be highly commended—and those interested may obtain copies by applying to the firm's home office, 21 Burling Slip, New York. The company maintains laboratories equipped with every modern facility and an experienced technical staff which it places at the disposal of its customers in every part of the world, and the matching of shades on any particular material, a co-operative effort in solving problems, and the supplying of special technical data referring to the application of dyestuffs—all without expense to the consumer—are important features of "National" service.

FOREIGN TRADE OPPORTUNITIES

Names and addresses of any of the firms mentioned below may be obtained by direct application to the U. S. Bureau of Foreign and Domestic Commerce, which compiled the list, or any of its district and co-operative offices. The Bureau does not furnish credit rating or assume responsibility as to the standing of foreign inquirers. Applications for particulars should refer to opportunity numbers; and in case information is desired regarding more than one, inquiries should be made on separate sheets.

34570—A mercantile company in Rumania desires to purchase and secure an agency for the sale of *chemicals*, drugs,

anilines and *dyes*. Quotations should be given c. i. f. Rumania. References.

—o—

34555—A mercantile firm in Algeria desires to establish connections with firms in position to supply *cotton and silk goods* of all kinds, sugar, coffee, spices and rice. Quotations should be given c. i. f. Algeria. References.

—o—

34637—A commercial agency firm in Australia desires to secure an agency for the sale of oils, fats and waxes, and *chemicals*. Quotations should be given c. i. f. Melbourne. References.

—o—

34690—A commercial agent in the United States, who is about to return to Mexico, desires to secure an agency on a commission basis for the sale of shoes, *hosiery, underwear and dry goods*. No reference given.

—o—

34682—A firm of importers in India desires to secure an agency for the sale of *aniline dyes*, paper of all kinds, *chemicals*, patent medicines, mill stores, stationery and sundries, etc. Quotations should be given c. i. f. India ports. References.

—o—

34606—A commercial representative from Australia is in the United States for a short time and desires to secure agencies for the sale of women's apparel of all kinds, including shoes, *hosiery, gowns, corsets, furs, gloves and underwear*; also *dyestuffs in packages*. References.

—o—

34640—A merchant in Italy desires

to purchase oxide of zinc, carbonate of lead, red lead, and *colors in powder form for paints*. Shipments to be made in kegs. Quotations should be given c. i. f. Italian port. Cash to be paid. Correspondence should be in Italian or French. References.

—o—

34557—A manufacturer's representative from Venezuela is in the United States and desires to secure an agency for the sale of *cotton goods*, glassware, table and window glass, pharmaceutical goods, enamel ware, flour, leather and tools. References.

—o—

34654—An importer of wool in France desires to purchase from American farmers and requests that samples of *wool* be submitted to him. He also wishes to be placed in communication with a firm that would be willing to ship a certain quantity to France on consignment. No reference offered.

—o—

34660—A commercial agent in Bulgaria desires to secure an agency for the sale of *tanning extracts* and materials. Quotations should be given c. i. f. Bourgas. Terms: Part cash, balance against documents. Correspondence should be in Bulgarian or French. Reference.

—o—

34667—An industrial engineer in Spain desires to secure an agency for the sale of machinery of every description, also mechanical, electrical and *chemical laboratory supplies* and railroad supplies. Quotations should be given c. i. f. Barcelona and Bilbao.

Correspondence should be in Spanish.

—O—

34642—A company of commission agents in India desires to purchase and secure an agency for *textiles*, haberdashery, *hosiery*, *dyes*, *woolen yarn*, *wool* (*Berlin wool*), buttons, hardware, stationery, glassware, glass bangles and beads, laces, ribbons, trimmings, and gold and silver thread. Quotations should be given c. i. f. Indian port. Reference.

—O—

34619—A mercantile firm in India desires to purchase *hosiery* for men, women and children in *silk*, *cotton and wool*, and *ribbons*, embroidery trimmings, women's and children's ready-made garments in wool and cotton, men's underwear, and special lines. Quotations should be given c. i. f. Indian port. References.

Dye-a-Grams

Strikes are a national disease. An ounce of prevention would be better than any amount of cure!

—O—

Tips may be classed as a gift. To our notion they're an indemnity.

—O—

THE "OFF" WEEK—"Reporter" Headline. It'll be an "on" week, we'd say, when Congress passes the Dye bill.

—O—

If Germany wants to raise funds, we suggest she pawn the "Watch" on the Rhine!

—O—

"Dye House Problems Relating to

Cotton Are Welcome in Our Laboratories"—*National Adv.* Those having trouble with wool, let these words sink in!

—O—

Herr Gustave MacDonald—Sounds like a Scottish insult!

—O—

Reparation Colors be d—d; what we want is Reparation Money (ACTION, NOT SYMPATHY!).

G. E. T.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF AMERICAN DYESTUFF REPORTER.

Published weekly at New York, N. Y., for April 1, 1921.

State of New York, County of New York, ss.: Before me, a notary public in and for the State and county aforesaid, personally appeared Alfred P. Howes, who, having been duly sworn according to law, deposes and says that he is the publisher of the American Dyestuff Reporter, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the name and addresses of the publisher, editor, managing editor and business manager are:

Publisher—Alfred P. Howes, 4109 Woolworth Building, New York City. Editor—Laurance T. Clark, 4109 Woolworth Building, New York City. Managing Editor—Laurance T. Clark, 4109 Woolworth Building, New York City. Business Manager—Eugene C. Mayer, 4109 Woolworth Building, New York City.

2. That the owners are: Howes Publishing Co., Inc., 4109 Woolworth Building, New York City; Alfred P. Howes, 4109 Woolworth Building, New York City; Mary K. Howes, Northampton, Mass.; William F. Collins, Upper Montclair, N. J.; Derfla H. Collins, Upper Montclair, N. J.; N. H. Hiller, Carbondale, Pa.; Jos. L. Schroeder, Hartsdale, N. Y.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustee, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

Alfred P. Howes,
Publisher.

Sworn to and subscribed before me this 24th day of March, 1921.

[Seal]

Edw. E. Vincent.

(My commission expires March 30, 1922.)



AMERICAN DYESTUFF REPORTER

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By Raefaele Sansone

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

New York, April 25, 1921

No. 17

DYES AND THE WAR INDUSTRIES BOARD

An Account by B. M. Baruch of the Measures Adopted
by This Body to Protect the Industry During the War

A FINAL word concerning the advent of the American dye industry during and as a result of the World War, together with the role of the War Industries Board in helping to preserve and supply it with necessities during those critical months of its history, has appeared over the signature of Bernard M. Baruch as part of the latter's report to President Wilson made March 3 of the present year under the general title "American Industry in the War."

The opening chapters of this interesting report deal with the origin and purpose of the War Trade Board, the program of the requirements and its study of resources, and takes up the questions of priorities, conservation, price-fixing and labor problems encountered during those feverish months. The bulk of the work consists of sections devoted to the various commodities over which it exercised supervision, in which chemicals for munitions, of course, and the artificial dyes and intermediates industries, play an important part. Throughout the whole the scheme was to direct attention to the things

accomplished rather than to the individuals who accomplished them, and among these things we are enabled to read again of how the prices of dyestuffs went up some 1,500 per cent due to the orgy of speculation and their essential character, and of the programs of conservation and curtailment which were adopted. The section devoted to the dye industry emphasizes well the need for preserving this industry and indicates what a struggle the country went through to win the position we have attained to-day. And in his preface Mr. Baruch recommends strongly that "through a system of stimulation by a protective tariff, a bonus, an exemption from taxation for a limited period, licensing, or any other effective means, every possible effort should be made to develop the production of manganese, chrome, tungsten, dyestuffs, by-products of coal, and all such raw materials usually imported but which can be produced in this country. Above all," he states, "immediate and persistent efforts must be made to develop the production of nitrogen and its substitutes, not

alone for war but for agricultural purposes."

There are two aspects, the report declares, to the way in which the war has brought dye manufacturing to America. When the German supply was cut off, the Americans were challenged to manufacture their own dyes. Prices were high enough to stimulate every effort. At the same time the war was demanding for the manufacture of high explosives the same chemicals in huge quantities which for the most part were the constituent materials of synthetic dyes.

Before the war Germany manufactured more than three-fourths of the world's supply of dyes, and nearly all of the intermediates used in their manufacture. This country had plants producing about 10 per cent of its consumption, but 90 per cent of the intermediates used in these plants came from Germany. Every necessary basic raw material, however, except nitrate of soda, is found in this country in abundance greater than we can use. Many of the processes of manufacture were not known here, and the Germans had fought jealously any development. In 1900 we started to manufacture aniline, but the Germans flooded our markets with aniline at a price so low that our plants never got established.

Commerce in German dyes and intermediates began to be curtailed as soon as the war broke out in Europe, and prices rose 1,500 per cent or more before the end of 1915. Two features affected prices: The fact that the shortage was so much discussed lead to an extraordinary amount of speculation; and the fact that the cost of dye enters as such a small percentage of the value of finished textiles, while the dye is itself an absolute essential, made textile manufacturers pay any price in preference to closing their mills.

Artificial dyes, called also coal-tar, aniline or synthetic dyes, are to be distinguished from vegetable or natural dyes. Natural dyes can not compete with synthetic dyes in normal times, the latter being produced at a

very much lower price. The dry distillation of bituminous coal gives as products coke, ammonia, gas, and coal tar. By fractional distillation and other processes some 150 different chemicals can be derived from coal tar. The elemental derivatives, chief examples of which are benzol, toluol, creosote oil, solvent naphtha, naphthaline, xylol, anthracene and carbazol, are called in the trade "crudes." By the chemical processing of crudes the so-called "intermediates" are derived. Intermediates of higher complexity are also made from intermediates of lower complexity. Some of the best known intermediates are aniline oil, phenol (carbolic acid), salicylic acid, beta-naphthol and paranitraniline. For example, benzol upon treatment with nitric acid gives nitro-benzol, an intermediate. Nitro-benzol upon reduction gives aniline. Aniline upon treatment with methyl alcohol gives dimethylaniline, an intermediate. Some 300 intermediates are used in making the 900 synthetic dyes known to the trade.

Very few intermediates were produced in the United States before the war, but in 1917, 134 different intermediates were made by 118 different firms. The total weight was 287,000,000 pounds, valued at \$104,000,000. The synthetic phenol industry was created during the war to meet the demands for this material in the manufacture of picric acid. The synthetic process is, however, too expensive to compete with its production as a coal-tar derivative for the normal market. Synthetic dyes are built up from the intermediates.

This country manufactured dyes to the value of about \$3,500,000 in 1914 and \$68,700,000 in 1917. The production in 1917 equaled the pre-war importation in tonnage, but not in the variety of dyes. The azo and the sulphur dyes were made in largest amounts. Only about 3 per cent of the pre-war importation of indigo dyes was produced, and the alizarines were little beyond the experimental stage.

The most difficult period of the war for American dye consumers was late 1915 and 1916. Small amounts were brought in from Germany in exchange for shipments of cotton, but it was done with great difficulty on account of British objection. Importations from Switzerland were two or three times normal. American capital was slow in entering the producing industry, and many of the processes were protected by German-controlled patents. On September 8, 1916, a dyestuff tariff law was passed providing for a duty of 30 per cent plus 5 cents per pound on dyes with certain exceptions, 15 per cent plus 2½ cents per pound on intermediates, and placing crudes on a free list. With the passage of this law, capital turned to the industry.

The trading with the enemy act, October 6, 1917, broke the German control of patents. Under its provision the Federal Trade Commission was given authority to issue licenses under patents owned by enemy aliens. With this much protection, but under circumstances in which the manufacture of explosives was demanding every pound of coal-tar derivatives which the country could produce, the dye manufacturers built an industry which was in operation in time to save the textile manufacturing business of the country from the disastrous effects of a dye famine.

Supervision of the dye industry was from the beginning of the council an important part of the work of the Chemicals Division. The Artificial Dyes and Intermediates Section was formed in the spring of 1918, with J. F. Schoellkopf, Jr., as chief. When he entered the army in September Victor L. King succeeded him.

Many of the constituent materials of dyes were placed under Government control during 1918—toluol, phenol, acetic acid, wood alcohol, chlorine, caustic soda, nitrate of soda, ammonia, and others. It became the problem of the section to make careful studies of the exact needs of the dye manufacturers in order to supply

them with enough to encourage a development sufficient for the necessities of the textile trade and yet not subtract more than was absolutely necessary from the manufacture of explosives.

A number of programs of conservation and curtailment had to be inaugurated. Among notable examples of these are sulphide of soda, toluol, acetic acid and nitric acid. The demand for olive-drab cloth for uniforms made the consumption of sulphide of soda abnormal. Orders for olive-drab cloth for civilian use were cut to 25 per cent, and an agreement was reached with the trade to eliminate them and to eliminate the use of sulphide of soda for dyeing black hosiery, but the end came before this plan was put into operation. A saving was also effected by a rule requiring sulphide of soda to be shipped in fused form instead of crystal form, which is two-thirds water. A new method was discovered by which the quantity of nitrate of soda used in

azo dyes was cut down. The use to some extent of vinegar as a substitute for acetic acid was inaugurated.

It was the purpose of the section also to protect the industry in its relation to foreign trade. Two problems arose. A group of Swiss color manufacturers made overtures to obtain the release of certain scarce raw materials from this country under a promise to furnish finished dyes in return to the United States. This action was opposed by the section and was not carried out.

Nutgalls, imported from China, are manufactured into tannin, gallic acid and pyrogallic acid. These in turn are used for dyes for developing moving-picture films and other films and for medicinals. Shortage in shipping reduced importations, and it became necessary for the section to allocate all that arrived. In order to do this intelligently it was necessary to study the relative needs of each industry using the product and the proportion of nutgalls which should go into each of the acids, in order that each consumer might have his fair share, as the importance of his product was determined.

The close of the war left the dye industry in a favorable condition for full development. Prices of all the constituent materials were immediately reduced and many of them were a drug on the market. Toluol, which had been commandeered at \$1.50 per gallon, sold in December, 1918, at 25 cents per gallon. Phenol fell from 43 cents per pound to 11 and 12 cents. The extent to which the industry had grown even before the end of 1917 is shown in the following table:

PRODUCTION OF SELECTED DYESTUFFS, 1917

Crudes:

Benzol	gallons..	40,600,000
Toluol	do ..	10,200,000
Solvent naphtha	do ..	3,240,000
Naphthalene	pounds..	36,000,000
Creosote oil	gallons..	52,500,000

Intermediates:

Aniline oil	pounds..	28,000,000
Beta-naphthol	do ..	5,950,000
Para-nitraniline	do ..	1,700,000
Phenol	do ..	64,300,000
Salicylic acid	do ..	3,480,000

Dyes:

Chrysoidine Y	do ..	196,000
Chrysoidine R	do ..	58,100
Scarlet 2R	do ..	633,000
Orange 2	do ..	713,000
Bismarck brown 2R.....	do ..	262,000
Direct black	do ..	6,000,000
Nigrosine (spirit soluble)	do ..	302,000
Nigrosine (water soluble)	do ..	1,970,000
Indigo (20% paste).....	do ..	1,690,000

W. T. B. SUMMARIZES 1920 FOREIGN DYE IMPORTS

A report on foreign coal-tar dyes for which import licenses were granted during the fiscal year ending June 30, 1920, has been issued by the War Trade Board Section of the Department of State. This was prepared by Charles S. Hawes, research assistant, and lists the name of the color, the Schultz number where available, the country of origin and the quantity in pounds.

A summary at the beginning of the report shows that licenses for 9,518,304 pounds were issued, divided among the different countries as follows: Germany, 3,721,950 pounds; Switzerland, 3,854,421 pounds; England, 1,625,543 pounds; "all other," 316,390 pounds.

The total dyes for which licenses were granted included the following classifications: Direct cotton colors, 1,690,101 pounds; basic colors, 497,231 pounds; acid colors, 2,264,055 pounds; acid colors which are true alizarines, 149,593 pounds; alizarine colors, 889,742 pounds; chrome colors, 946,155; vat colors, 1,917,222 pounds; sulphur colors, 592,322 pounds; lake colors and color lakes, 426,322 pounds; spirit and oil soluble colors, 11,972 pounds; developers and special products, 123,389 pounds; union colors, 5,775 pounds; unidentified and unclassified colors, 4,425 pounds.

Attention is called in the introduction to the fact that all the licenses issued were not used to effect actual importations. It is also noted that the figures should tend to show what dyes should be added to the dye-producing program in this country in order to place the United States in a

more independent position and to help free the country from the necessity of importing foreign dyes.

NATIONAL TO HAVE VARIED DISPLAY AT KNITTING ARTS SHOW

The National Aniline & Chemical Company, Inc., will be represented at the forthcoming Knitting Arts Exposition by an elaborate display which will present to the visitor the varied uses for which dyes bearing the "National" brand are employed in the several branches of the knitting trade.

The importance of knitted fabrics of all kinds, comprising cotton, wool, silk, artificial silk, etc., ranging from the finer textured glove material, to the heavier fabrics used for sweaters and other knitted outer garments, will be shown, dyed in all the shades that custom or fashion decrees to be right. There will also be shown an extensive array of socks, stockings, bathing suits, including yarns, etc., in all colors, and illustrating every process of the art of dyeing with "National" Dyes.

The "National" Exhibit Booth occupies spaces J, K, and L, in the center of Aisle K, and facing the visitor as he passes down the main central aisle of the hall. It will be elaborately decorated in fitting harmony with the character of the Exposition. The exhibit will be in charge of Dr. Louis J. Matos, of the technical staff of the "National," assisted by W. H. Wilard of the Charlotte office, and S. W.

Wood, of the Philadelphia office, together with a corps of technical men and salesmen representing every branch office of the company.

ITALIAN DYE INDUSTRY IS HARD HIT BY FLOOD OF REPARATIONS COLORS

Producers, Meeting in Protest, Declare
Toll Should Be Taken in Agricultural
Chemicals—Exchange Flurry Complicates
Situation—Government to
Aid—Reduces Import Duty on
Crudes

By RAFFAELE SANSONE

Genoa, April 1.

Special to THE REPORTER.

The deliveries of dyestuffs from Germany arranged for by the Italian Government under the reparations provisions of the Treaty of Versailles, while benefiting the trades dependent on colors, succeeded nevertheless during March in upsetting very greatly the Italian artificial dye industry through placing cheaper products at the disposal of the various dyeworks and printworks. The result was that the dye industry here, which had been kept alive up to the end of 1914 only at a great sacrifice but which during the conflict had been able to extend and improve its manufactures, suddenly found itself in danger of being ruined.

Matters had reached a point where several plants producing organic pharmaceutical and coloring products were obliged to close down entirely, dismissing all employees, and the climax was

(Continued on page 12.)

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 of the American Dyestuff Industry. Unbiased
 contributions appreciated.

A. P. HOWES, President
 LAURANCE T. CLARK, Editor

SIXTEEN HUNDRED PER CENT AD VALOREM

You will observe on reading Mr. Sansone's interesting article from Italy, printed elsewhere in this issue, that the United States and England are far from being the only countries in which Germany's enormous capacity for producing dyestuffs efficiently and cheaply, operating in conjunction with greatly altered exchange values, exists as an ever-present threat to overwhelm the infant dye industries unless artificial protection of the most decided character is not forthcoming to equalize the difference until these industries can be built up and placed on a sound economic basis. The writer declares that when Italy's quota of reparations colors was dumped upon the domestic market, the Italian dye industry, after having been kept alive by dint of sacrifice under conditions similar to our own, suddenly found itself in danger of being ruined.

There—as if one were needed—we have an excellent example of the effects of ill-advised action with respect to these reparations dyes. To bring them into a country which is striving to create a dye industry, without exercising some sort of supervision, is simply to court the speedy destruction of that industry, and if our legislators will but turn their eyes toward Italy they will be able to see the sure consequences of leaving the American dye industry to battle single-handed against the Cartel. The dual combination of German manufacturing system and present exchange

rates, either one of which would be sufficient to bring about the overthrow of a fledgling dye industry, is something with which no group of men, no matter how gifted, could hope successfully to grapple.

As one extends one's view to include the dye problem in other nations, the fallacy of the tariff idea for the protection of any of the lesser dye-making countries becomes more glaring than ever. Let us see, for instance, just how much difference there is between the exchange situations in Italy and in the United States—or rather, between the Italian and American value of German money. The lira, of course, has shrunk in value as measured against the dollar, but we can consider it from the Italian standpoint, as a unit made up of 100 centesimi. Using the U. S. dollar as the most convenient basis for comparison in both cases, the German mark in normal times would have a value in Italy of 123.31. To-day, however, its value is down to 29.5 centesimi—which shows a fall of 76 per cent in its Italian value in lire.

Now, using the dollar here as a unit made up of 100 cents, in normal times the German mark would have a value of 23.80 in this country, whereas at this writing its actual value is 1.39 cents or thereabouts, having declined 94 per cent of its American value in dollars—a mighty tumble indeed!

Leaving all other questions aside, the Italians would have to impose an ad valorem duty of 350 per cent on German color quotations merely to place things back on their old footing, while in this country we should have to fix our ad valorem duties at something like 1,600 per cent before that stupendous gap in exchange values could be bridged! And that would only be pulling up even, so to speak. After that, let the reader estimate for himself or consult Bradford Webster or other tariff exponent as to how much should be added to overcome the Cartel's striking fondness for selling at almost any loss—yes, and even practically giving dyestuffs away—in order to drive its last foreign rival through bankruptcy

proceedings. We know perfectly well that this was done in the past; that today the Cartel is quite *able* to repeat the performance, and finally, that some of its members have openly boasted that this was what they *would* do just as soon as they caught the infant American dye industry out without its governmental nurse.

The Italian Government, we learn from Mr. Sansone's article, has attempted to meet the situation temporarily by reducing the duties on imported intermediates. The dye manufacturers, for their part, are demanding that Italy take reparation in the form of some class of goods which cannot be so well supplied by home production—preferably agricultural chemicals, of which that country has not enough and of which there are no producers to speak of who would be injured by such imports. These are rather negative measures, and neither one, it will presently be discovered, travels even a respectable fraction of the distance which lies be-

tween Italy's present status and complete protection for her dye industry. The Italian Government will have to do better than that if it expects to combat the I. G.

The tariff will not do the trick in this country, although conceivably it might serve the purpose in Italy. Certainly no sane person would dream of asking the Senate to pass a measure imposing an ad valorem duty of 1,600 per cent—plus a specific duty to equalize the remaining discrepancy between normal German quotations, which are the result of a highly organized and complex system such as we have not yet developed here, and the necessarily higher prices which American manufacturers must charge for the better dyestuffs until the system is complete. The derisive shouts which would greet such a proposal may well be imagined, but even assuming, for the sake of argument, that the members of the Senate would commit themselves to such a piece of legislation—sound enough though it be

—and then have the nerve to run again for public office, it is still difficult to see how an adequate—and when we say adequate we *mean* adequate—tariff for protection could be fair or beneficial to the consumers of dyes in this country.

Certain of the textile interests say they are perfectly willing to have an “adequate” tariff on dyestuffs, but would object to the licensing system on the ground that it might establish a monopoly which would raise dye prices on them. Very well then, let them have their 1,600 per cent, and more. Let them write in to Washington and tell their representatives that this was what they had in mind—if they really mean what they say.

For our part, we should prefer to see them getting whatever colors they need—and cannot obtain here—from abroad at a fair price and on payment of a nominal duty. And this is exactly what the licensing system will do for them.

ITALY AND THE REPARATIONS COLORS

(Continued from page 9.)

arrived at when a general meeting was held in protest at the *Associazione Chimica Industriale*. Here it was vigorously pointed out that if Italy was to secure the benefits of war reparations, she could very well begin by taking as part of her share such substances as potassium salts and other fertilizing products, for which her agriculturists have always great need, and the importation of which would not damage an existing industry.

OTHER COMPLICATIONS

To make matters more difficult, foreign exchange fell suddenly, toward the middle of March, bringing the value of the United States dollar down from 27.32 lire, to 24.21 lire; the value of the English pound sterling from 106.50 to 5.92; the value of the Swiss franc from 4.55 to 4.25, and the value of the German mark from 0.44 lire to 0.40 lire. This caused a further lowering in the prices of dyes in addition to the drop already brought about by the in-

troduction of the German colors, and rendered still more difficult the task of the Italian manufacturers of artificial organic coloring matters. Examples of the reductions per kilo in products for which a market is still open were the following: Nigrosine crystals, from 35 lire to 30 lire, and Direct Black, from 45 lire to 40 lire.

The producers of natural coloring matters also passed through difficult times, owing to a reduced demand and the sudden falling off in prices, the price of Logwood extract dropping in a few days from 11 to 10 lire per kilo, the price of Hematine crystals from 18 to 17 lire and the price of Fustic extract from 10.50 to 10. The importations of Gambier, Cutch, Cochineal, natural and synthetic Indigo, Logwood extracts and woods, Redwoods, Persian Berries, Quercitron extract and other natural colors was still very fair during March, the fall in prices causing some consumers to increase their orders.

DYESTUFF INTERMEDIATES

It being, however, the firm intention of the Italian Government not to abandon the dye industry, this country is still in the market for foreign intermediates, the importing of which is to be encouraged with the provisions that all offers are to be accompanied by instructions for the utilization of the products, as well as by a statement of the purposes for which they can be employed. Offers should also be accompanied whenever possible by figures. It is felt that this policy should result in the Italian manufacturers of artificial dyes being aided and encouraged to make new ventures leading to ultimate expansion and a greater independence of foreign sources of supply. It is also stated here that foreign producers of coal tar colors will likely find it profitable to interest themselves in the production of dyestuffs in Italy. Instances of this have already occurred, notably in several cases where foreign works have sold their processes of manufacture to Italian dye works, retaining an interest in the production from these

processes. This led subsequently to the investment of additional capital in the works.

A NEW ROYAL DECREE

With the purpose of assisting the manufacture of artificial dyestuffs, the Italian Government promulgated during March a Royal Decree reducing to 20 lire per metric ton the customs duty on all benzene and other light, limpid coal tar oils imported for the manufacture of artificial organic coloring materials. All such importations, however, must be adulterated at the expense of those taking part in the transactions by methods to be established by the Minister of Finance. The new law is certain to be of considerable importance to the dye industry, inasmuch as of late the price of benzene has been raised to a quite impossible and prohibitive figure through taxation. Interested parties, however, are counseled to devote some study to the question of what adulterants can best be added, to the end that the manufacturing costs of the dyestuffs to be derived from the benzene, or of intermediates produced from it, may not be unduly complicated nor rendered unnecessarily expensive.

MORDANTS, ASSISTANTS, DYEHOUSE PRODUCTS, ETC.

The imports of tannic acid, aniline oil, beta naphthol, paranitraniline and vanadium salts, despite a reduction in working hours and days of work adopted by many consuming plants to meet the crisis through which all Italian industries are passing, remained good, and will in all probability register an in-

crease during the coming months. This is indicated by the need of increasing the quantity of cotton goods dyed, and also by the probability of Italy extending her business in the near future to Oriental countries and South America.

SANDOZ ANNOUNCES RESUMPTION OF PRE-WAR TRISULPHON VIOLET N

McArthur, Irwin, Ltd., report that the Sandoz Chemical Works, of Basle, Switzerland, are now able to manufacture their pre-war type "Trisulphon Violet N," which corresponds to:

Diamine Violet N.....	(Casella)
Dianil Violet H.....	(Hoechst)
Naphtamine Violet N.....	(Kalle)
Naphtamine Violet R	(Oehler-Electron)
Dianol Violet N.....	(Levinstein)
Benzo Fast Violet NC.....	(Bayer)

Its fastness properties include: Fastness to rubbing, good; fastness to light, good; fastness to alkali, good (under addition of soda, slightly greener); fastness to organic acid, good; fastness to washing, good. Solubility, good when dissolved hot.

Dyeing method — Light shades should be dyed under addition of 0.5—1 p.c. soap and 5 p.c. Glauber's salt; medium and darker shades with 2 p.c. soda and 10—20 p.c. Glauber's salt (an addition of soda has the effect of producing greener shades and can eventually be omitted).

Dye for $\frac{3}{4}$ —1 hour with the minimal quantity of dye liquor at 140 deg. — 203 deg. Fahr. The product is

particularly suitable for cotton dyeing in the "Jigger" and in the vat.

In Union dyeing the cotton is dyed darker and bluer than the wool.

If applied in the dyeing of half silks, Trisulphon Violet N can either be used for covering the cotton in a weak alkaline bath, or else in a soap and Glauber's salt bath for obtaining even shades on both fibers. For artificial silk, Trisulphon Violet is very useful. In printing a Hydrosulphite discharge leaves a pure white.

When dyed on wool and silk, in a neutral weak alkaline bath, Trisulphon Violet N is of good fastness to light, milling, acid and alkali."

GEIGY'S CHICAGO BRANCH IN NEW QUARTERS, WITH PROPACH AS HEAD

The Geigy Company, Inc., 89 Barclay Street, New York, has announced the removal of its Chicago branch to new quarters at 113-115 West Austin Avenue, that city. Here is maintained a warehouse stocking the products of J. R. Geigy, S.A., Basle, Switzerland, and the American plants of this firm, in quantities sufficient to cover the immediate requirements of customers, thus insuring improved and prompt service.

C. Propach, for twenty-five years identified with the territory which the Chicago branch serves, has resigned his position as manager for the Grasselli Chemical Company, Dyestuff Department, to take charge of this office. Mr. Propach's connections also include managerial positions successively with the Farbenfabriken of Elberfeld Company, the Continental Color & Chemical Company, the Bayer Company and the Hudson River Aniline & Color Works. Close application to requirements, as well as a thorough understanding of the trade, plus a completely equipped laboratory, are all important factors in the service which this branch is prepared to render.

To manufacture and deal in dyes, stains, cleaners, etc., the Lefera

Blackening Company has been incorporated under the laws of New Jersey. Headquarters will be located in Newark, and the capital is given as \$90,000. The incorporators consist of Frank Lafera, Newark; Charles J. Izon, Bloomfield, and Harry A. Smith and Joseph A. Smith, both of Paterson.

BEARING OF A SYNTHETIC DYE INDUSTRY UPON OUR NATIONAL WELFARE

(Continued from last week.)

Perhaps it will help us to visualize the ramifications of this industry more clearly if we alter our simile and liken our initial materials to a grove of trees, each one growing out of the mother earth of original sources (coal tar, for example), the branches and smaller twigs representing the intermediates and the fruit the final product, be it dye, drug, perfume or something else.

Let us step a little closer, then, and examine these trees somewhat more carefully, so as to ascertain the kind of soil upon which they grow, their relative size and spread, the nature and extent of this development, and the character of the fruit. In the brief time available this examination must necessarily be hasty, superficial and incomplete, but it will at least give us a better idea than the hazy outline we have hitherto seen only from a considerable distance.

BENZENE (BENZOLE)

The first tree we come to is labeled Benzene, but is also called Benzole. Although benzene is the correct chemical designation, the name is unfortunate, since there is a totally different compound, obtained from petroleum, which is known as "benzine," and this often leads to confusion. We shall therefore use the term benzole in what follows. In its size, development, and in the beauty and variety of its fruit, this benzole tree is one of the monarchs of the whole grove.

The total production of all grades of benzole for the year 1919 is placed by

experts at 63,000,000 gallons; of which about 53,000,000 gallons went for motor fuel, 5,500,000 gallons were produced in the form of pure benzole and were consumed mainly by the dye industry, and 4,500,000 gallons were sold as 90 per cent benzole for use as solvent in the paint, rubber and other industries.

Thus there appears to be an ample supply of benzole in our country to permit considerable expansion of our dye production, unless other industries requiring it in large amount very markedly enlarge their demands also. The question is an important one for the dye industry, as benzole is in many respects the most fundamental of all the crudes, all the rest of which, by the way, can be made from benzole in the organic laboratory, although not commercially.

The first branch which leaves the parent trunk of benzole starts out under the name of nitrobenzole and, after one or two minor offshoots, continues as aniline, from which latter a most luxurious myriad growth springs. This nitrobenzole-aniline branch is not only the largest and most far-reaching of the entire tree, but it also has the most wonderful development and the most exuberant foliage.

Nitrobenzole is made direct from benzole by warming it with a mixture of nitric and sulphuric acids, the process being called nitration. The product is a pale yellow oil when freshly prepared, of a strong and rather rank bitter-almond odor; in fact, it was first used as a cheap perfume, under the name of oil or essence of mirbane, and small amounts are still occasionally used for that purpose. To a limited extent also it finds use in the manufacture of explosives. The great bulk of it, however, is so treated as to compel it to exchange the oxygen it contains for hydrogen, a process which the chemist terms reduction, and the nitrobenzole is thus reduced to aniline. This nitration and reduction for the manufacture of aniline are carried out mainly by the dye plants, since aniline is one of the most important of dye intermediates.

As the great majority of all the early coal tar dyes owed their origin, either directly or indirectly to aniline and very closely related compounds, the name Aniline Dyes has been widely current as synonymous with synthetic dyes, and still persists, although no longer appropriate except in restricted sense.

It may surprise some of my hearers to learn that indigo is now generally manufactured from aniline, and that the amount of natural indigo imported is relatively negligible (46,878 pounds in the first six months of 1920). Indigo is probably the oldest dye known to man. It may be difficult to prove that the blue room in Noah's ark was decorated with it when he took his historic cruise, but it is scarcely to be doubted that Joseph's coat of many colors owed no small part of its brilliance to this common article, for indigo has been found in the pyramide of Egypt, in the ruined cities of Babylonia, and in the shops and houses of Pompeii. It is a product of many different plants, occurring in many countries, and has for untold ages been used by savage and civilized alike. And yet, at the present time, indigo is produced in commercially important quantities, from its natural source, in but two sections of the globe, the Bengal region of India, and Central America (Salvador). These are the last strongholds of an industry that was once world-wide. The chemist has succeeded in improving upon the leisurely and complicated processes of nature to such an extent that synthetic indigo is now produced rapidly and eco-

nomically from aniline in any desired amount and of higher purity than the natural article. The indigo farmer, like the madder farmer and the cochineal raiser, will ultimately be compelled to turn his land to other crops—possibly to the raising of much needed food-stuffs, in the case of India.

That the chemist can in a few minutes produce what the indigo plant requires a whole season to do, I will prove by making some indigo before your own eyes from a few simple chemicals. (Experiment.)

In our country, indigo ranks second to Sulphur Black in point of consumption, but it is first in world consumption on account of the large quantities used in China. Our production in 1919 exceeded our pre-war annual imports and our domestic needs, so that large amounts were exported.

The only dye rivaling indigo in the estimation of the ancients was Tyrian Purple, or the Purple of the Ancients, a dye so expensive that in the reign of Diocletian (300 A. D.) one pound of purple wool cost about \$240, which would make the dye itself worth approximately \$5,000 a pound. Its use became identified with royalty, and led to such expressions as "porphyrogenitism," "born to the purple," "royal purple," and the like. The dye was obtained from certain species of sea snails (*Murex*), which on decomposing formed this precious coloring material. It occurs in a small sac behind the head, and forms a drop of whitish liquid when first removed. On exposure to the air and light, it changes first to green, then blue, and finally purple. If set by an alkali (soap), it becomes a fast crimson, such as ecclesiastical dignitaries still wear. Great heaps of these snail shells are still to be found outside the ancient coast cities of the Mediterranean. After the fall of Tyre, the secret of the source of this dye appears to have been lost for centuries. In 1909, Professor Friedlaender gathered 12,000 of these mollusks and by very careful work succeeded in getting a total of 1.5 grams of the coloring material, which he investigated carefully and found to

be identical with a dye prepared five years previously by Sachs, but not put upon the market because of its inferiority to others already available. The interesting thing about the nature of the dye is that it is a derivative of indigo, containing two bromine atoms in place of two of the hydrogens of ordinary indigo. It is now frequently made in the organic laboratories of our universities, and I have had several of my own students prepare it at various times.

It is perhaps worth noting in passing that aniline owes its name to its having been obtained first from indigo, the Arabic name of which was "anil," or "al-nil," that is "blue stuff," by distilling the latter with caustic soda, but it took chemists forty years to find out how to produce indigo from aniline.

In 1856, the late Sir William Perkin, while endeavoring to devise a method of preparing quinine synthetically, oxidized some commercial aniline oil, and obtained instead a purplish dye, which he called "mauve," and which was the first of the modern synthetic dyes. Perkin was quick to recognize the importance of his discovery, and this became the starting point for the wonderful synthetic dye industry and the origin of the name "aniline dyes." Perhaps you would like to see this historic experiment repeated. (Experiment.)

In the case of many of the dyes described beyond as prepared from naphthalene, carbolic acid, etc., an aniline derivative is often present as one of the components of the initial mixture. Certain of the aniline dyes, in the form of lakes, are employed as pigments, as already mentioned, and a considerable tonnage of such lakes is manufactured for this purpose; others form the basis of inks and ink powders.

A further and very important use for some of these dyes is as bacterial stains, in the diagnosis of various diseases; and occasionally they are used direct as bactericides in attacking sundry ailments.

But dyes are not the only fruit we find this aniline branch bearing. If we follow out certain lateral branches from it, we shall come upon products which

are even more important, the synthetic drugs, upon which our health and even our lives may depend in times of critical illness. Among these you will find such well-known medicinals as acetanilide (antifebrine), antipyrine, arsphenamine (salvarsan), neo-arsphenamine (neo-salvarsan), cinchophen (atophan), and many others.

The history of synthetic dyes is being repeated in the case of synthetic drugs. As we are all aware, the market during the past decade has been flooded by what are dubbed the "newer remedies," most of them derived from coal tar dye intermediates, and practically all of them produced in the organic laboratory, where they were built up for the sole object of obtaining certain definite physiological results. They represent the efforts of the chemist to develop a really scientific materia medica, and the slow but sure progress in this direction is not only highly interesting, but means much to suffering humanity.

It was early recognized that the physiological action of various plants was due to certain definite chemical compounds which they happened to contain, and the first task of the chemist was to isolate, identify and study these "active principles." This study led quite naturally to attempts to reproduce artificially either these substances themselves or others of analogous structure, and to determine the particular atomic complexes responsible for the physiological effects observed. Then taking the knowledge thus gained, the chemist cut loose entirely from natural products and set about building up in his own laboratory new bodies which would contain these physiologically potent groups, and his activities in this direction are reflected in the innumerable new drugs constantly appearing. A steadily brightening light is being shed upon the connection between chemical structure and physiological action, and the physician now has at his command powerful healing drugs, which, so far as we know, are not duplicated in nature.

The natural substances are built up

in the plant to play a definite role in the structure and life of those organisms, and the fact that they happen to be of therapeutic value when taken into the human system is purely fortuitous. The synthetic remedies, on the other hand, are synthesized with the specific object in view of producing substances which shall contain physiologically active groups, or so to modify a compound as to enhance its therapeutic value. It is not necessary, therefore, to construct the entire complicated molecule of an alkaloid if the same results can be secured with simpler structures, and this has been demonstrated already in many instances. In the case of the natural remedies again, other substances are frequently present which exert undesirable and even dangerous side effects. The great advantage of the synthetic drug then lies in its being a pure chemical individual, instead of a mixture of varying and uncertain content. This permits exact determination of its physiological action, accurate dosage, easy detection of adulteration and greater stability.

The life functions are essentially chemical, the cell being the laboratory, and the isolation and chemical identification of the substances formed by the organism in its endeavor to protect itself against the inroads of different diseases should show to the chemist the type of compound to be added in order to support and stimulate this action. After the drug leaves the hands of the organic chemist, it is the task of the physiological chemist to ascertain just

what happens to it in its course through the system, and to discover if possible which one of its numerous transformation products or ions is really the one upon which its therapeutic value depends. The time is surely coming when it will be necessary only for the physician to state just what effects he wishes to produce, and the chemist can build up for him a compound which will do all that is required and be free from unpleasant side or after effects, much as the child would build up a new kind of house with the same old blocks. This probably seems to you an extravagantly optimistic view, but if you will consider for a moment what has already been accomplished in this direction I am sure that you will share my enthusiasm. It takes years to solve such problems, of course—von Baeyer worked twenty years upon the molecular structure of indigo, but he finally solved the mystery.

The popular superstition that the medicinal value of a pure chemical compound is modified in some obscure but positive manner by the source from which it is derived, is as old as the hills. The famous "English drops," a drug which really consisted of nothing but ammonium carbonate with a little ethereal oil, sold for high prices up to the close of the seventeenth century, because it was stated by some that the ammonium it contained was obtained by the dry distillation of silk, while others even went so far as to maintain that it was prepared by distilling five pounds of the skulls of persons who had been

hanged (or who had come to some other unnatural end) with two pounds of dried vipers, hartshorn and ivory. We smile, and yet this same kind of superstition still retains its hold upon the community and has materially retarded the introduction of really valuable synthetic remedies.

The Arell Silk Company, of Paterson, N. J., has been incorporated with a capital of \$50,000. The incorporators are Sol Rich, Mary Rich and Dorothy Kulman.

Dye-a-Grams

This column extends its best wishes to the partnership formed by Stolt & Wallace, of Du Pont's Boston office.

—o—
 "A Lost Opportunity"—"Reporter" editorial. We were quite pleased, after reading this, to discover that it was only an editorial we had lost!

—o—
 We note advertisements signed "Aniline Sales Corp." and "Certified Chemical Corp." Well, if the Dye bill isn't passed soon, some of our firms may be adding an "se" to their signatures! (Deep, what?)

—o—
 Latest: "An optimist is a Scotchman running around New York with a corkscrew in his pocket."

—o—
 "Drys in Washington will nip beer plan in the bud"—*news item*. Bud—so to speak—weiser!

—o—
 New Englanders *do* look in the dictionary once in a while, despite a general belief to the contrary.

—o—
 What has become of the old-fashioned Longworth bill of—so it seems—our forefathers?

—o—
 ALIBI

April air is mild and hazy;

Ambition it dismisses.

Thus one scribbles, dull and lazy,

Such pallid junk as this is!

G. E. T.



AMERICAN DYESTUFF REPORTER

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May 2, 1921

In 2 Sections
Section 1



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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

In Two Sections—Section 1

Vol. 8

New York, May 2, 1921

No. 18

THE FIGHT HAS BEEN WON!

Dramatic Developments of Past Week Sweep Away Uncertainty as to Fate of Dye Industry, Which, for the First Time, Is Now a Sound Investment Instead of a Speculation

I UNDERSTAND you and Jim are going to address the American Chemical Society. Well, you can tell the members that what they need more than addresses is protection—and they are going to get it."

The reader will please take a long, satisfying glance at the words written above. They happen to mean a very great deal. Friends of the cause of the dye industry—which means all of us with a few unimportant exceptions—may well breathe a sigh of relief and draw from them more genuine cheer than from almost any which have been uttered these two years past. Many men during that time have spoken or written words of similar import, but the utterances have carried no positive guarantee, have lacked the weight of an authority high enough to redeem them on demand at their face value. A little more than a week ago, however, they went to par, and there they will remain until maturity, for they were addressed to Representative Nicholas Longworth, father of the Dye bill and in charge of the new dye measure to

be included in the forthcoming general tariff program, on the eve of his departure to speak at the Spring Meeting of the American Chemical Society at Rochester; the "Jim" referred to was Senator James W. Wadsworth, who accompanied Mr. Longworth and also addressed the gathering of chemists—and the speaker was President Harding!

We do not believe that it would be in the least degree unduly optimistic to construe the President's remarks to mean that the uncertainties over the ultimate fate of the dye industry's case are at last dispensed with, once and for all, and that the triumph of the advocates of rigorous protection is complete and final. For if there is anyone in the country endowed with the necessary power to bring about the fulfilment of the promise contained in those few lines, that man is the President. He is leader of his party, and his party controls Congress by an ample majority. The disposition of both House and Senate is, moreover, favorable; Mr. Longworth is aggressively behind the dye indus-

try in its fight for justice, and altogether the various signs and portents could scarcely be more auspicious.

Another press account of the semi-official interview makes President Harding say: "May I suggest that what the industry needs more than addresses is protection?—and with that sentiment I am heartily agreed." Same thing; you may take your choice between the two versions. We do not imagine that Messrs. King, Moses and others of the opposition will find much to encourage them in either—nor will the laboring lobbyists.

But this is not the only big news in a week replete with big news. Another worry has been almost swept from the minds of the dye men by the action of Senator Knox in introducing a measure somewhat similar to the "Penrose Pacifier" of the winter of 1919-20. There has been no little apprehension in dyestuff circles over the rapid approach of the enactment of the Knox Peace Resolution, which would have automatically dissolved the War Trade Board and thus left the American dye markets utterly unprotected against the Cartel for many months—for it is not thought that the general tariff program which will contain the new Longworth bill can be completed and passed before next November or December. Accordingly, an amendment to the proposed Emergency Tariff bill was drawn and submitted to the committee in charge of the measure, transferring to the Treasury Department the dye-licensing functions of the War Trade Board, providing for the continuation of all licenses granted by the Board prior to its dissolution, and proposing an appropriation of \$50,000 to carry on the work.

Senator Knox responded in a manner both prompt and gratifying, and, after declaring that something of the sort would certainly have been included in his Peace Resolution had it not been that he had mistakenly supposed the dye industry to have been provided for through other special

legislation, offered the amendment as follows:

"Provided, further, That on and after the day following the passage of this act, for a period of six months, no sodium nitrate, dyes, dyestuffs, including crudes, intermediates and other products derived directly or indirectly from coal tar and no finished or partly finished products, mixtures and compounds of coal-tar products, and no other synthetic organic drugs, or synthetic organic chemicals, shall be admitted to entry or delivered from customs custody in the United States or in any of its possessions unless the Secretary of the Treasury shall determine that such article or a satisfactory substitute therefor is not obtainable in the United States or in any of its possessions on reasonable terms as to quality, price and delivery, and that such article in the quantity to be admitted is required for consumption within six months by an actual consumer in the United States or in any of its possessions, and the Secretary of the Treasury may make all rules and regulations necessary and proper for the accomplishment of the purposes of this proviso. And upon the day following the approval of this act the War Trade Board section of the Department of State shall cease to exist; all clerks and employees of the said War Trade Board section shall be transferred to and become clerks and employees of the Treasury Department; all books, documents and other records of the said War Trade Board section shall become books, documents and records of the Treasury Department; all individual licenses issued by the said War Trade Board section prior to the passage of this act shall remain in effect and the importation under such licenses shall be permitted; all unexpended funds and appropriations for the use and maintenance of the said War Trade Board section shall become funds and appropriations available to be expended by the Secretary of the Treasury in the exercise of the power and authority conferred

upon him by this proviso, and for the carrying out of the purposes of this provision during the fiscal year ending June 30, 1922, the sum of \$50,000 is hereby appropriated."

This amendment to the Emergency Tariff bill is to the dye industry about what the bill itself is to a host of other industries. It will form a temporary stop-gap until the general tariff in its final form can be arranged and presented. If the Senate should balk at passing it, the industry would indeed be in a bad way—but once again without being unduly optimistic, it may safely be said that such a contingency is so remote as not to cause a moment's uneasiness. It is not at all reasonable to suppose that the Senate would withhold from the industry the chance to continue as it is at least until it can be officially determined just what protection it shall receive in future years. There was no trouble at all about passing the Penrose Resolution at a time

when the Senate was far more rushed than it is to-day, and there will be no trouble about passing the Knox amendment for the same reason that our courts do not hang a man and then try him afterwards. The Senate well knows that to allow the dye industry to go unprotected from July 1, say, until next December, would leave little if anything to protect when it finally got around to the general tariff legislation.

Beyond a doubt the reader has already grasped the true significance of the foregoing array of facts. However, here it is as The REPORTER views it: With the certainty that the Senate will oblige in the matter of the Knox amendment, and with President Harding's assurances to Mr. Longworth, the American dye industry, as the result of these developments of the week, is at last as safe as though the original Dye bill had just been passed. This may be asserted with entire confidence. For the first time

the trade may feel justified in concluding: The Fight Has Been Won! Equally important, the industry has almost overnight become a sound investment instead of a speculation.

The REPORTER feels that it is not acting prematurely in offering to the industry, to consumers, and to the country at large, its heartiest congratulations.

Philadelphia, New Hampshire and Colorado papers please copy!

STATISTICS OF U. S. IMPORTS OF DYES BY CLASSES

DURING 1920

Rochester, N. Y., April 28.—The following statistics on imports of dyes during 1920 were presented to the Dye Division of the American Chemical Society to-day. They were prepared by Dr. C. R. Long, chemist for the U. S. Tariff Commission, as follows:

TOTAL IMPORTS OF COAL-TAR DYES DURING CALENDAR YEAR 1920 —3,700,000 POUNDS

Vat dyes other than Indigo, 855,000 lbs. (lbs.)	
Indanthrene Blue GCD.....	150,000
(or 18% of total for this class)	
Indanthrene Yellow R and G.....	about 10% total
Indanthrene Black BB.....	about 10% total
(lbs.)	
Bromindigo	34,000
Ciba Scarlet	25,000
Hydron Blue	20,000
Ciba Violet B.....	18,000

Mordant and chrome dyes, 840,000 lbs.	
Anthracene Blue WR.....	114,000
(or 18% of total for this class)	
Alizarine.....	73,000
(or 9% of total)	
Brilliant Delphine Blue BS.....	29,000
Eriochrome Blue Black B.....	20,000
Omega Brown PB.....	11,000

Acid dyes, 765,000 lbs.	
Wool Green S.....	127,000
(or 16% of total for this class)	
Patent Blue and Patent Blue A.....	86,000
(or 12% of total)	
Xylene Light Yellow 2G and R.....	about 10% total
(lbs.)	
Tartrazine	57,000
Quinoline	35,000
Xylene Light Blue VS.....	26,000
Acid Violet 4BN.....	22,000

Direct dye, 595,000 lbs.	
Zambesi Black	about 40,000
(or 7%)	
Trisulfon Brown B and MB.....	about 40,000
(or 7%)	
Trisulfon Brown GG.....	about 40,000
(or 7%)	

Chloramine Brilliant Red 8B.....	about 23,000
(or 4%)	
Heligoland Black	about 23,000
(or 4%)	
Pyragol Orange G.....	about 23,000
(or 4%)	

Sulphur dyes, 255,000 lbs.

Thionol Red Brown.....	38,000
(or 15%)	
Thionol Green DY.....	24,000
(or 10%)	

Basic dyes, 200,000 lbs.

Auramine	85,000
(or 45%)	
Phosphine	20,000
(or 10%)	

Indigo, 171,000 lbs.

The above figures are approximate, and under each class only the more important dyes have been listed.

SAYS DOMESTIC DYE COMPETITION HAS BEEN WHOLLY ELIMINATED BY THE GERMANS

There is in Germany to-day a single giant chemical trust which combines under one unified operating body all the chemical and dyestuff factories which were before the war controlled by three competing groups, declares Dr. O. B. May, of the May Chemical Works, Newark, N. J., in a recent article written upon his return after an extended tour of the industrial centers of Germany.

This combination concentrates into the hands of a single group enough power to make the largest previously existing industrial organization appear insignificant by comparison, he says.

The giant combine has the entire German market, as well as the foreign market, divided into territories among its members so as to avoid any possible clash of interests and any possible competition in prices.

Scientific system and management in this chemical and dye trust is carried to unheard-of extremes, Dr. May continues, not only in the selling but also in the manufacturing end. Every branch of the industry has a certain minimum standard of attainable perfection which must be achieved. In case it is not, the management of that

department is marked as inefficient and eventually replaced by better fitted leaders.

This German trust is well able and ready to sustain losses in new foreign markets for a year or two at the beginning in order to get the business, which is the chief consideration at present. Because of their scientific and systematic management and the low value of the mark they will be a most formidable rival to similar industries in other countries. Dr. May is emphatic in his belief that from what he has seen of the German chemical trust and their methods during his recent trip American industries will need protection, and that without it they will perish in competition with the Germans.

BRITISH DYESTUFFS IS TO "CARRY ON" IN RESEARCH

At the recent meeting of British Dyestuffs, Ltd., the chairman outlined plans for company research as follows:

"During the debates on the Dyestuffs bill some of our critics in both Houses of Parliament and in the press suggested that the importance of research was being or would be overlooked by our corporation. Need I say that this is quite untrue? I wish to assure the shareholders and the public that the board is very much alive to the vital necessity for continuous research in our industry. We realize that we must insure that all the processes we use are operated

with the maximum efficiency, and for this purpose they require almost continuous examination in order that every possible improvement may be discovered and be made use of. We realize that, so far as we have not done so already (and we have, in fact, made great progress in this direction), we must discover and perfect the processes which are necessary to enable us to manufacture those foreign dyes which are needed by dye users but which at present are not made here. Finally, we realize that we must not be content to copy. We must allow free play to the inventive genius and initiative of British chemists—so that we may ultimately lead and not follow.

"All this is the work of the research department, and it is upon these lines that our research department is working. You will see from the report that we have spent upon research, during the first two years of the corporation's existence, £289,366. This sum includes the large capital expenditure which is necessary to lay the foundations of a permanent research organization. You will observe that in the balance sheet we have a reserve fund of £100,000 for research. As I told you last year, we are fortunate enough to have at the head of this branch of our activities two eminent chemists—both of them Fellows of the Royal Society—Dr. Green and Dr. Robinson. Working under them are many zealous and promising chemists.

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A. P. HOWES, President
 LAURANCE T. CLARK, Editor

In Two Sections—Section One

THE PROPOSED "SELECTIVE EMBARGO" ON FOREIGN DYES

Speaking before the American Chemical Society at Rochester Representative Longworth had this to say of future plans for the protection of the American dye industry:

"The bill which I introduced in the last Congress and which passed the House but never got through the Senate, I propose to put bodily into the chemical schedule, except that instead of having the license feature as written in that bill it will be changed into a selective embargo.

"The proposition of the license, of the main license, as Dr. Herty and others will know, does not sound well to many American business men; they don't like to have to get a license to import chemicals. It is proposed that the Tariff Commission should make a list of dyes not importable under any condition, another of those importable under certain conditions, and another of those importable under any condition.

"Roughly speaking, those dyes which Germany makes, which we make here at reasonable prices and in reasonable quantities, are not to be permitted to come into this country at all. Those that are produced here, but in limited quantities, and where delivery might not be certain, may be imported under certain conditions and in certain quantities; and dyes not produced here may be imported."

This statement would appear to give the industry and the nation quite all

that could be asked for. The press account, however, leaves a doubt in one's mind as to the status of dyes not being made by Americans at the time of the passage of the act but which may be subsequently produced and placed upon the market.

The press does not quote Mr. Longworth as saying that in such cases, these colors are to be stricken from the list of "dyes not importable under any condition" or the list of "dyes importable under certain conditions" during the life of the law. And if this is not specifically agreed upon and made a part of the new measure, the dye industry will not have that incentive to experiment with new dyes which the licensing system would give it.

But it is more than probable that Mr. Longworth means his selective lists to be subject to change at the discretion of whatever body is to be charged with the administration of the law, in which case its effects would in no way be different from those of a licensing system except that no importer will be required to go through the formality of applying for a license—which would be an advantage.

In this event, the proposed law would be acceptable to the industry and the country; the point is merely raised here to indicate that the industry will want that assurance before giving it complete approval.

SENATOR KING AND THE D. A. R.

Had it not been for the sudden shift last week in the fortunes of the dye industry from irritating doubts to pleasing certainties, we might have become greatly excited over the recent public exhibition of Senator William H. King, of Utah, staged in Washington by Senator William H. King and displaying Senator William H. King in a bit of clowning evidently conceived and executed for the benefit of such representatives of the Cartel as happened to be present. As it is, however, we are willing to cite it as the World's Worst Example of Effrontery and let it go at that.

The daughters of the American Rev-

olution, holding a convention in the capital city, passed a resolution favoring an embargo on German dyes.

Whereat Senator William H. King, who subscribes to several newspapers and had read the resolution, raised his hands in pious horror. Then he assumed an expression of deep regret and declared that, alas, there could be no doubt of it; the "dye monopoly" of America had succeeded in hoodwinking the D. A. R. into becoming a vehicle for the spread of its "propaganda"; the D. A. R. was unquestionably being "used."

Senator King read a letter to his colleagues, which he said had been written by a prominent resident of Washington, protesting hotly against the D. A. R. lending itself for the circulation of propaganda "for a monopoly in which the Du Pont interests have a large part."

Then the Senator went on to say that the D. A. R. had become an agency "for the bombardment of Congress in behalf of the dye monopoly."

Senator Thomas used to do much better than that. So did Senator Moses, before the time when he and his co-workers got hopelessly tangled up in trying to prove the "world monopoly" planned by Du Pont and Levinstein. Perhaps the Senator himself was aware of the shortcomings of this, his latest device, but feeling called upon to dig up something, did his sorry best and now can borrow a line from Touchstone: "A poor thing, but mine own."

The others at least succeeded in creating a little cheap sensationalism, whereas Senator King has only succeeded in being clumsily insulting to a group of patriotic women who are showing their patriotism in an enlightened manner not to be surpassed by any of the men's organizations.

All honor to the D. A. R. for its intelligent recognition of a fundamental need, and for its praiseworthy action in exercising its legitimate privilege of public expression of sympathy with those striving to fill that need.

And may Senator King's very silly

attempt to discredit the action of that organization be received with the disapproving silence it so patently calls for.

ATMOSPHERIC HUMIDITY IN ITS RELATION TO ELEC- TRICAL PHENOMENA IN TEXTILE MA- TERIALS

The modern view of static or so-called frictional electricity is that it is an intensification of the feeble, natural surface electrification produced by the intimate contact which occurs during friction or when two bodies are pressed together. This intensification or heaping up of the natural surface charge can only occur on a body which is a non-conductor of electricity. The conductivity of textile materials depends upon the amount of moisture they contain—which in turn depends upon the humidity of the atmosphere to which they are exposed. Thus, wool exposed to an atmosphere of 73 per cent humidity at 65 deg. Fahr. will contain about 16 per cent moisture ("regain") and will normally exhibit little electrification. Wool exposed to an atmosphere of 25 per cent humidity at 65 deg. Fahr. will contain about 8.5 per cent moisture, and will be readily electrified. Further, for a fixed percentage humidity of the atmosphere the equilibrium condition is greater the lower the temperature. In spite of this fact the electrification of wool increases as the temperature is lowered below 60 deg. Fahr., owing to the resultant harshness of the fiber. The most suitable degree of humidity varies for the different processes. In the case of cotton, for the processes preparatory to spinning, a humidity of 62 per cent, at temperatures from 70 to 80 deg. Fahr., is most suitable. For spinning, rather less humidity—52 per cent, at 80 to 90 deg. Fahr.—is required. For worsted drawing a humidity of 70 per cent is sufficient to diminish very largely electrical effects in normal cases. As such a degree of humidity causes trouble in

spinning from other causes, about 50 per cent is more suitable.

Though humidification diminishes electrical effects, it does not always effect a perfect cure. In worsted drawing and spinning trouble may occur even in humid atmospheres if the wool fiber, owing to its previous treatment, has been brought into a readily electrifiable state, and this trouble is aggravated by increased speed of machinery. Conversely, the wool fiber may be brought into such a state that it does not electrify appreciably even in comparatively dry atmospheres.—*Fiber & Fabric*.

DYEING OF ARTIFICIAL FLOW- ERS AND MILINERY GOODS

By J. H. HALLIDAY

DYEING HORSE HAIR FOR AIGRETTES

Horse hair for this purpose should be dyed cold with basic dyes in an alcoholic solution of shellac. Make a stock solution by dissolving white shellac in alcohol to about the thickness of varnish. Also dissolve the dye in alcohol. The horse hair must be straight and all water must be avoided in dyeing, as it will cause the hair to curl. Introduce the hair in the above-mentioned alcohol bath of dye and shellac, care being taken that the hairs do not stick together when it is dried. Hair should be maintained in this solution until the desired color is obtained, and then removed and shaken until it is thoroughly dry.

NATURAL GRASS

Before dyeing, soak the grass in boiling water to soften it. Then rinse in cold water and squeeze out all the surplus water. Dye the grass in a solution of basic dyes with the addition of Glauber's salts. Rinse well and dry. The grass thus dyed will be brittle, and to overcome this and to soften it and make it pliable soften it for about one-half hour in a bath composed of two-thirds water and one-third glycerine. Remove the grass, squeeze out the surplus liquor and dry.

PEPS OF SEEDS

White peps or seeds are dyed in a bath composed of alcohol and the desired color, care being taken that there is no water present, as this will cause the stems to twist and make them unsuitable for future use. These products can also be dyed in the same manner as horse hair.

MUSLIN TUBING

Muslin tubing is dyed in the same manner as peps or seeds, except that it must be hung up until dry.

WHITE COVERED COTTON WIRE

White covered cotton wire is dyed with basic dyes and also some of the acid dyes in the same manner as the peps or seeds, care being taken to dry it as quickly as possible, in order to prevent the wire from rusting.

WOOL SLUBBING

Wool slubbing, used for the centers of roses or daisies, is generally dyed with acid colors. The slubbing is made into hanks or skeins, placed upon sticks and introduced into a cold bath consisting of the dyestuff, 10 per cent Glauber's salt and 5 per cent to 10 per cent sulphuric acid. Bring slowly to the boiling point and boil until the bath is exhausted. Care should be taken to avoid violent boiling, as this will cause the slubbing to felt.

JACK MUSLIN

Dye the muslin in a water solution of eosine or erythrosine, according to the shade desired. Introduce the wet muslin in a solution consisting of four ounces of sugar of lead to one gallon of water. Frame and dry. Make a solution of jack paste (pigment colors) of the shade desired with the whites of eggs thoroughly beaten. Use enough whites of eggs to keep the solution from rubbing off the muslin when dry. Sugar may be used instead of the whites of eggs, but the results are not as satis-

factory. Apply the solution of jack paste to the face of the muslin with a soft flat brush, being careful not to brush too hard, as this will force the paste through to the back of the muslin.—*Textile Colorist*.

The Baltimore Dyeing & Finishing Company, Baltimore, Md., has filed notice of change of name to the Meadowbrook Works, Inc.

Dr. Carl I. Alsberg, chief of the Bureau of Chemistry, U. S. Department of Agriculture, has resigned, to take effect June 1. Dr. Alsberg is to be one of the directors of the new food research nutrition institute at Leland Stanford University in California.

The Casini Dye Works, Inc., New York, has been incorporated with a capital of \$5,000, to manufacture dyes, colors, etc. The incorporators are E. Johnston, A. F. Rennet and A. Casini, 194 West One Hundredth Street.

NATIONAL ANNOUNCES WOOL BLUE CG, NIAGARA BLUE HW, AND NIAGARA BLUE HW CONC.

The National Aniline & Chemical Company, Inc., announces the production of a new acid blue, "National" Wool Blue CG. This new dye produces a particularly brilliant shade of blue, that will permit its use for a variety of purposes, especially for navy blues on ladies' dress fabrics, as well as for knitting yarns.

It will not stain silk, for which reason it is useful for those fabrics where silk stripe and shot effects are a feature and, owing to its property of discharging to a clear white, it will prove of interest to the textile printer.

"National" Wool Blue CG possesses excellent solubility, dyes level, and exhausts completely from the dye bath. Its fastness to rubbing, perspiration, water and hot-pressing is very good. As a shading dye in combination with a number of other "National" Acid Dyes it will be found most suitable for a wide range of fashionable blues and browns.

"National" Niagara Blue HW is one of the most important of the recent additions to the list of National's products, and for the convenience of the dyer is offered in two concentrations.

It will be found of particular value for dyeing cotton in all stages of manufacture, and is also useful for dyeing mixtures of cotton and wool. "National" Niagara Blue HW possesses satisfactory leveling and covering properties, including superior fastness to water, for which reason it is preferable to other types for dyeing blues of heavy shade on cotton fabrics of various kinds including linings, the cheaper grades of

cotton backings for furniture and book-binder's cloth. It is likewise useful for dyeing jute, straw and chip braids, artificial silks, etc. Owing to its peculiar property of dyeing vegetable fibers at reduced temperatures, it is serviceable as a "speck dye," and may be applied in the fulling mill.

BEARING OF A SYNTHETIC DYE INDUSTRY UPON OUR NATIONAL WELFARE

(Continued from last week.)

In addition to drugs and dyes, some of our important photographic developers owe their origin to nitrobenzole and aniline. Such are hydroquinone and metol, for example; and at the outset of our participation in the war, the shortage of metol was felt seriously, for there is little use in having photographs made of the enemy's lines from airplanes or captive balloons, unless suitable chemicals are available to develop and fix the picture.

Among the more fragrant blossoms of the benzoles tree are the synthetic perfumes. These include one of the constituents of rose perfume (phenyl ethyl alcohol), which is present also in the odor of the orange blossom, one of powerful rose-leaf aroma, some of geranium-leaf (diphenyl oxide) and of syringalike (acetophenone and methyl acetophenone) odors, and many others of delightful fragrance.

The same tree that bears these beautiful products bears also some of the deadly toxics used in the late war; such, for example, as the famous "sneeze gas" (diphenylchlorarsine) with which the Germans filled their blue cross shells, and which killed many of the allied soldiers when it was first em-

ployed, for the older allied masks did not give complete protection against it.

Other dangerous products are the various explosives derived from benzole, such as the more highly nitrated benzoles, T. N. A. (tetranitroaniline), tetryl (tetranitromethylaniline), and picric acid. It is interesting to observe that the latter is really growing on a graft from the carbolic acid tree.

Aniline provides also one of the best stabilizers (diphenylamine) to protect smokeless propellants against deterioration, and yet this substance itself becomes a powerful explosive when sufficiently nitrated, or it may, on the other hand, be converted into some very beautiful dyes.

Like carbolic acid, aniline will unite with formaldehyde to a resinoid. The properties of the product are not such as to make it of any commercial service, but the reaction is such a simple one to carry out that we can do it here on this table. (Experiment.)

Even these manifold uses of aniline and other benzole derivatives do not begin to exhaust the list. Aniline and divers compounds produced therefrom find application also as accelerators in the vulcanization of rubber (*e. g.* thiocarbanilide, *m*-phenylene diamine, nitrosodimethylaniline), and yet further uses might be cited before the story was complete.

TOLUENE (TOLUOLE)

Having examined the benzole tree somewhat critically, let us turn to the next tree in our coal-tar grove. The label on it reads "Toluene, or Toluole," and it is the next older brother to benzole, belonging in the same family and having all the family traits and characteristics, plus a few peculiarities of its own. In size and development it is almost as imposing as benzole.

As toluene is the raw material for the manufacture of the important explosive T. N. T., every effort was made during the war to increase our output of this crude by installing additional by-product coke ovens and by "stripping" illuminating gas, as well as by

other processes, with the result that for the calendar year 1918 our total output was over 12,000,000 gallons, valued at over \$18,000,000. With the cessation of the war the demand and price fell precipitately, the production of pure toluene for 1919 being estimated at about 1,000,000 gallons, practically all of which went to the manufacturers of dyes, dye intermediates and medicinals.

Let us consider briefly some of the intermediates and final products which owe their origin to this crude.

As in the case of benzole, our toluene can be nitrated, giving nitro toluenes, which on reduction yield compounds (toluidines) similar in properties, utilization and possibilities to aniline. The nitration products include the T. N. T. noted above, other explosives, and one of the best of the synthetic musks, of powerful musk-like odor but, so far as we now know, not identical with the odoriferous constituent of the real musk from the musk deer. The toluidines yield dyes, drugs, etc., much in the same manner as aniline, but having already followed out such a branch in the case of benzole, let us take a different one here—one inscribed "Chlorotoluenes."

When toluene is treated with chlorine, under proper conditions, some of the hydrogen it contains is driven out and the chlorine takes its place, new compounds being formed.

One of these (benzyl chloride; 1919 production 720,953 pounds, worth \$166,182) is used for the manufacture of dyes known as Benzyl Violets, and is also the source of one of the most potent lachrymatory gases of the war (brombenzyl cyanide), which was prepared by acting upon it first with cyanide of potassium and then subjecting the product so obtained to the bromine extracted from the brine wells of Michigan or of the Ohio River Valley. Strange as it may seem, if instead of using bromine we carry this intermediate product through a different series of reactions, the result is a wonderfully fragrant perfume possessing in high degree the delicious scent of the hyacinth and narcissus, and entirely free from any lachrymatory effect.

Another one of our chlorination products from toluene (benzal chloride), when boiled with lime gives the chief constituent of the oil of bitter almonds (benzaldehyde), which is better than the natural product in certain respects and is used as a substitute for it (1919 production of benzaldehyde, 518,634 pounds, valued at \$403,109). From this synthetic oil of bitter almonds, many compounds are prepared which contribute to the happiness of our people. One of these is the popular dye called Malachite Green, of which we made 560,301 pounds in 1919, valued at \$1,827,474. Another is synthetic oil of cinnamon, identical with the substance present in the natural oils of cinnamon and cassia, and to which they owe their characteristic odor and taste. It is consequently sold as a substitute for the natural article, and the value of the natural oil is decided commercially by the percentage of this substance present. Other products obtained from synthetic oil of bitter almonds include certain of the perfume substances actually present in orange blossoms, jasmine, tuberose, gardenia and ylang ylang, as well as purely artificial compounds of the odor of moss roses, of hyacinths and of narcissus.

When boiled with a strong solution of caustic potash, our oil of bitter almonds changes to two other bodies. One of these is benzoic acid, of which I shall have more to say in a moment. The other is a mobile colorless liquid, related chemically to ordinary alcohol, and which is itself the source of drugs and perfumes. These two products can be made to unite to a totally different one (benzyl benzoate), which is a heavy oily liquid and which has the valuable property, when added to the "dope" or varnish for airplane wings, of causing this coating to dry slowly and harden without cracking, and it is hence called a "restrainer."

Whereas, as just described, one of the products obtained by the action of chlorine upon toluene yields oil of bitter almonds when boiled with lime, there is a third one of these chlorination products (benzo trichloride) which when

treated in the same way gives benzoic acid instead, and this is one of the chief commercial methods for the manufacture of this important compound (1919 production, 699,108 pounds = \$534,832). The synthetic product is identical with that obtained from storax, balsams of Peru or Tolu (whence the name toluene), or from other natural sources. It finds employment as a food preservative (in the form of its sodium salt), and in the manufacture of dyes and perfumes, as well as of the production of such drugs as procaine (novocaine), anesthesine, barbital (veronal), chloramine-T and dichloramine-T.

Another branch from our toluene tree is marked "Sulpho derivatives," and it bears that remarkable sweetening principle, "Saccharin," four pounds of which will sweeten as much coffee as a ton of ordinary sugar. It is the sweetener customarily used by those people suffering from diseases which would be aggravated by cane sugar.

XYLENE (XYLOLE)

Standing next to benzole and toluene, and members of the same family, is a group of triplets, the three xylenes, whose first names are Ortho, Meta and Para. Like other triplets, they are so fond of one another that it is not easy to separate them, and as they are so much alike in appearance and general behavior this is not necessary in many cases. They are found in that fraction of coal tar sold under the name of "solvent naphtha" which, as its name

suggests, finds its major use in industry as a solvent.

Although the source of many beautiful dyes, and of other useful products, and possessing still greater possibilities than either benzole or toluene, the xylenes, largely because of the difficulty of separating them, have not achieved anything like the same development, and we will not tarry longer to examine them more closely.

NAPHTHALENE

Turning now from the benzene family, we see another huge tree of wide-spreading habit and massive trunk, but of somewhat different appearance. Its tag reads 'Naphthalene.' It is brilliant with a fruitage of dyes of every conceivable shade, with only here and there a drug, perfume, or explosive.

It is worth noting that we use this crude, in the form of moth balls, to protect against insect ravages textiles which may be dyed with naphthalene dyes.

Not many years ago, naphthalene was the starting point for the manufacture of synthetic indigo, but it is now more economical to use aniline for this purpose. One of the intermediate products in this older process, when combined with wood alcohol, is converted into a perfume substance which is found in the flowers of the orange, jasmine, tuberose and narcissus.

ANTHRACENE

Another very important crude is Anthracene. Although as yet not the pa-

rent of such a numerous crop as either benzole, toluene or naphthalene, it is, however, the origin of some of the finest and fastest dyes in the world to-day, particularly in the class of vat dyes, a group to which by the way indigo belongs. The peculiarity of vat dyes is that on reduction they yield a soluble form of dye which thoroughly permeates and penetrates the fiber, and which on oxidation in the air separates the dye itself in an insoluble form within the fiber, extremely fast to light, washing and bleaching. As the operation is generally carried out by steeping the goods in a vat filled with the reduced dye, the process is termed vat dyeing.

Unfortunately, anthracene is one of the few really important crudes of which we still lack an adequate supply, and this is one reason why these dyes have been among the last to be manufactured here. In 1918, the actual anthracene contained in the crude product marketed was about 250,000 pounds, but very little of it was refined so as to make it available for the preparation of dyes, for which purpose it must be at least 80 per cent pure. The output in 1919 was more than three times as much (813,318 pounds), and a large proportion of it was refined, but it is roughly estimated that had it all been refined there would have been only about one-fifth the amount required for our domestic market, assuming those needs to be in the neighborhood of 4,000,000 pounds pure anthracene per annum.

(To be continued.)

The Lippmann Silk Manufacturing Company, of Paterson, N. J., has been incorporated with a capital of \$125,000. The incorporators are Benjamin M. Taub, Sophie Charney and Cora de Mol.

The plant of the Ammann Dye Works in Paterson, N. J., was practically destroyed by a recent disastrous fire. A very considerable quantity of silk was burned and the damage done is estimated at several thousand dollars.



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THE POWER OF COLOR

Dual Role as Sales Stimulant and Military Defender Described to Cotton Men by C. H. Clark, Editor of "Textile World"—Resolution Admits "Special Measure of Protection" Necessary

IN accordance with the policy stated early in the present year, The REPORTER presents this week another notable contribution to the struggle of the American dye industry for the protection which is its rightful due and which, even though that right be utterly disregarded, must nevertheless be given it for the sake of the country as a whole. Speaking before the annual convention of the National Association of Cotton Manufacturers in Boston, Charles H. Clark, editor of "Textile World," espoused the cause of the industry to such good purpose that the meeting produced the following resolution:

"Resolved, That the National Association of Cotton Manufacturers, in convention assembled, favors a tariff on foreign importations which, while assuring needed revenue to the Government, will adequately protect American labor and industries without creating or fostering monopolies. Be it further

"Resolved, That we favor for a limited period of years, such special measure of protection as will enable

the recently created American Dyes Industry while rendering fair and satisfactory service to consumers, to compete on equal terms with the dye makers of other countries, the same to be coincident with a simplification of the administration of the drawback provisions of our tariff laws to the end that American industries shall not be needlessly handicapped in world trade."

That, you will agree, is a very handsome thing for the Association to have offered the industry, for it has been repeatedly demonstrated that the only kind of protection which will do all the things required of it in this resolution, namely, to protect the dye makers and the dye users at one and the same time, and all without needless red tape, is the protection afforded by that recent outgrowth of the originally proposed license system, the selective embargo on foreign dyes as provided for in Mr. Longworth's new bill. Moreover, with all parties to the erstwhile dispute getting together in the manner made evident at the Boston meeting of cotton

manufacturers—and it was a national convention, be it remembered—plus President Harding's outspoken sentiments and the known majority of Senators and Congressmen favoring adequate protection, there is every reason for standing by our carefully considered assertion of last week to the effect that the battle is already won.

A portion of the address which aided in producing that resolution we propose to give you here, and we regret exceedingly that there is not room for the whole speech. Mr. Clark spent some time in showing the absolute dependence of the textile manufacturers upon the success of the dye manufacturers, and this is in itself so interesting and vital that it will be reproduced next week in another part of this publication. In the latter half of the address, which follows, the speaker emphasized the view, so often stated, that while it is theoretically possible for the Government to maintain synthetic chemical plants for the production of high explosives and gases in case of war emergency, these plants, to be effective, cannot remain idle until the need arises, but must keep abreast of the research work and discoveries of other nations. To do this it follows that "the Government substitute must duplicate the commercialized entity" and that "the only practical alternative of such a socialistic adventure is to grant our new organic chemical industries as adequate protection as Great Britain and France have given theirs."

But let Mr. Clark tell it:

This review of ancient and modern uses of color in textiles demonstrates in a partially inferential and partially direct manner that color is an absolute necessity to the commercial success of a very large proportion of the textile industry. While it is true that some of the factors that once controlled demand for color in textiles no longer play a dominant part, the majority of old impelling causes are still at work directly or indirectly. Religious, national and caste influences were the fashion dictators of ancient

times, and a careful study of Fashion's modern dictates will lead one frequently into the realm of national and caste significance of color. Fashion adapts but seldom creates anything really new.

The extent to which changing fashion in color increases the demand for textiles cannot be estimated with accuracy, but that it has an enormous influence, and is a far more important factor than fabric design is generally agreed by those who have studied the subject carefully. Organized attempts to control and standardize color tendencies in the various branches of this and other industries are evidence of a growing appreciation of the selling power of color, as well as of its power to cause serious losses when uncontrolled. The Textile Color Card Association of the United States that was organized by domestic ribbon and dress goods manufacturers and selling agents during the war gave to American textiles a much higher prestige than they had ever enjoyed before and this advantage should never be relinquished. Close co-operation of American dye-making firms is also worthy of continuance. The fact that France and England were accustomed before the war to set the color styles in textiles may not have proved particularly disadvantageous to the German dye-making industry, but for the new American dye industry there is equal opportunity with American textile manufacturers to build prestige and reputation on American colors dyed with American dyes.

That the Germans were appreciative of the commercial advantage that their control of synthetic dye manufacture made possible, and that they were about to capitalize it in a systematic way when the war intervened, is well authenticated. It was one of the chief objectives of the German dye trust and, in co-operation with German textile manufacturers, it was to deal a heavy blow, if not a death blow, to English and American supremacy in international textile trade.

They proposed holding out their

new and very special colors from any but German owned mills and dyeing establishments and, in addition, making a higher price for their regular run of colors to all foreign users. With this advantage and given an efficiency in textile making which would allow of competing without it, they hoped to choke our industry and that of England until they had control. At the foot of their rainbow was a pot of very slow poison.

It is clear, then, that the relation of the textile and dye-making industry assumes an international importance; it becomes a very strong factor in the rivalry of nations. It is no longer possible to say that it is immaterial to the textile industry of any country where the dyes which it uses are made. To do so is to lie down with one's head in the dragon's mouth and oblige the beast by waiting until he is hungry.

Fastness of a color to various manufacturing processes and to light, laundrying and certain other factors incident to its use in textiles is a most important commercial advantage. Any campaign of textile conquest that may have been considered by German dye manufacturers must have included capitalization of this feature of their synthetic dyes, yet prior to the World War they had completely failed to educate the public along these lines. The reputation that Louis Hermsdorff built up years ago for his fast black on hosiery through advertising might have been similarly es-

tablished by the German synthetic dye manufacturers for their whole line of dyes, and at a cost that would have been small in comparison to the possible results. We wonder if they realize that the publicity that would have cost them hundreds of thousands of American dollars and years of the cleverest kind of selling propaganda has been made available free of cost by the lack of color guaranteeing during the war? It is true that there was an excuse for the dry goods trade to refuse to assume responsibility for the fastness of many dyed goods during the war when the manufacturers were unwilling to do so, but at no time since then has there been reasonable cause for the insidious way in which they have continued to advertise their lack of faith in American dyes, while allowing it to be assumed that German dyes are superior.

The correction of this absolutely false impression regarding American dyes that has gained wide publicity is one of the greatest problems faced by the domestic dye and textile industries. The very fact that so large a proportion of consumers still believe in the superiority of German dyes, and would give them the preference, other things being equal, is an added reason why the domestic dye industry must be given adequate protection.

The conquest of foreign markets that was to result from this organized co-operation of the German synthetic

dye and textile industries may easily have been only one of several menacing attacks upon foreign trade supremacy to be launched by industries having the synthetic dye industry and Germany's marvelous mastery of organic chemistry as their basis. In addition to dyes the finished products of the coal-tar chemical industry are pharmaceuticals, photographic chemicals, perfumes, flavors, color lakes, synthetic phenolic resins, synthetic tannin materials, explosives and war gases. For the commercially successful production of most of these products the synthetic dye industry is pivotal, since its intermediates are the intermediates of the other products and the latter can be produced most cheaply as a by-product of the much larger dye industry.

In open competition against such a trust, the pharmaceutical, or dye, or other synthetic chemical company in this country could not hope for success. No tariff could be made high enough to prevent the German trust from throttling a foreign competitor, for it could well afford to sell at a large loss to produce the desired result, in the meantime netting a handsome profit on its other numerous lines.

Germany has over \$500,000,000 gold invested in the coal-tar chemical industry, and as it and its varied subsidiary industries were greatly expanded during the war to meet the enormous demand for high explosives and gases they must now find a peacetime outlet for a larger product than ever before, and their efforts will be backed to the limit by the Government. The expansion of the industry and its rapid transformation from a war to a peace basis is proved by the fact that dye production is now at the rate of 178,000 tons annually as compared with 135,000 tons before the war, and the Allied Reparations Commission is being urged to increase its takings of dyes under the peace terms. Not only does this mean that enormous stocks of dyes will be used at the first opportunity to recover lost markets without regard to price, but

it also means that the production of so-called by-products has increased and that research work in organic chemistry is being stimulated.

The fact that Germany's organic chemical industry is now concentrating its energy upon new commercial conquests would cause deeper concern throughout the world if there were a more adequate understanding among laymen of its prior accomplishments. If this knowledge were general in this country it is safe to assert that Congress would not hesitate to enact laws so restricting the importation of synthetic chemical products as to prevent the slightest competitive danger to our infant organic chemical industry. Great Britain has already done this by adopting a licensing system, for the British public realizes that they lost to Germany the leadership in this branch of industry, made possible by Perkins' discoveries, through failure to encourage the study of organic chemistry and the prosecution of research work.

By more than fifty years of laborious and systematic co-ordination of university training research work in laboratory and shop, by the development of a complete literature of the science, by Government subsidies, by pecuniary and honorary incentives to her scientists, and by industrial and sales development, Germany has attained a dominance in the science and the industry. It is the greatest source in the world to-day of war making and health giving power, and the synthetic dye industry is the pulsating heart that gives it life.

The interdependence of the dye-making and the textile industry, therefore, involves a responsibility to mankind that is of far greater importance and potentiality than their relatively insignificant products. Prosperous and progressive dye-making and textile industries are as necessary to national welfare as are defensive or offensive armaments. Problems affecting their prosperity and vigor are of vital importance to the welfare of every citizen.

It is quite true that it is possible

theoretically for the Government to maintain synthetic chemical plants for the production in a war emergency of high explosives and gases, but unlike munition plants they cannot remain idle until the emergency arises. To be effective, and to keep abreast of the research work and discoveries of other nations having complete, co-ordinating organic chemical industries, with their training schools and their allied industries, the Government substitute must duplicate the commercialized entity. The only practical alternative of such a socialistic adventure is to grant our new organic chemical industries as adequate protection as Great Britain and France have given theirs.

Because of the preponderating importance of the products of the organic chemical industry in war making it is inevitable that the crux of the disarmament problem will be the redistribution of the world capacity of this industry in such a manner that no country's capacity shall be largely in excess of its legitimate peace needs. In any event the principle employed must recognize the menace to world peace of a German organic chemical industry that so far exceeds this minimum. It is, therefore, apparent, that, until the disarmament problem has been disposed of, it would be the height of national folly to fail to encourage and safeguard our synthetic dyestuff industry. This consideration outweighs any quasi-political or commercial objections to protective legislation needed to make this safeguard-

ing certain. We must ever bear in mind that grim fact that they who make dyes to-day may make high explosives and war gases to-morrow.

FOREIGN DYES LICENSED BY W. T. B. FOR APRIL IMPORT

Following is a complete list giving the types and quantities of dyestuffs for the importation of which into the United States licenses were granted by the War Trade Board during April. This tabulation is being issued by the American Dyes Institute, and it is announced that anyone interested in the manufacture of dyestuffs who has not received a copy may obtain one by application to that organization's headquarters, 320 Broadway, New York.

It should be noted that, in addition to the colors listed, there were items licensed for import from England and France as follows:

Designation of Dye	England (lbs.)
Acid Magenta N.....	25
Aliz. Blue S Powd.....	500
Aliz. Orange Paste.....	1,500
Aliz. Red IP Paste.....	1,000
Aliz. Red YCA Paste.....	1,000
Auramine	1,165
Blue Lake	50
Cross Dye Green B.....	2,240
Cross Dye Green 2G Conc.....	4,480
Curcuphenine	1,000
Duranthrene Red Violet 2RN....	2,240
Durindone Blue 6B.....	500
Pigment Orange Base L.....	100

(Continued on page 12.)

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A. P. HOWES, President
LAURANCE T. CLARK, Editor

ON ACQUIRING THE MOON, WHAT THEN?

"Things are seldom what they seem," wrote the late Sir W. S. Gilbert as an opening line for one of the songs in the ever popular "H. M. S. Pinafore." "'Tis distance lends enchantment to the view," sang the poet, Thomas Campbell. How often have we yearned for the apparently unattainable, only to find on acquiring it that it had been immensely overrated. How often have we seen the bright bubble burst when we seized it!

All of which is called to mind by the case of a large American manufacturer of woollens. This company, in common with many another, felt keenly the loss of Germany's dyestuffs, and one of the colors whose absence seemed to leave a particularly prominent gap was Alizarine Blue. Heavens, how it was missed! Forced to substitute American chrome colors in place of it—merely as a makeshift, of course—the dyers suffered acute mental distress. They had to learn a portion of their business all over again, and all ardently hoped for the day when this German dye should be restored to them.

Behold! the day arrived, and with it a consignment of Alizarine Blue bearing labels to show that it had been passed by the official Reparations Commission censors. There was great rejoicing—for a little while.

We have it upon the authority of the chemists of this concern that the results which they have been getting

with the Alizarine Blue have been anything but satisfactory—so little so, in fact, that a return to the American "makeshifts" has taken place.

This instance is authentic and is, moreover, typical of a number which have come to the attention of this office.

Now, it is not believable that the German ability to make Alizarine Blue is executing a retrograde movement. This is hardly the time the Germans would choose for the introduction of an inferior brand of one of their former triumphs in the art of synthetic dye making.

The answer may be found in the fact that the American workmen, long familiar with the processes of dyeing with Alizarine Blue, found it extremely awkward to accustom themselves to getting results with the American substitutes, and that during the long interval between shipments of the Cartel color, the familiar operations had time to become the unfamiliar ones. The dyers had grown "rusty" in the application of Alizarine Blue and were thoroughly conversant with the American colors. To change again meant another period of uncertainty, and rather than go through with it with no gain to themselves in the way of improved results, they went back to old-new materials which they well understood. This serves, likewise, as another instance of the supreme importance of long experience and familiarity to anyone essaying the handling of dyestuffs.

The country thought it could not get along without Zambesi Black V. But it could not get this color for a long while, and finally an American dye manufacturer, after much trouble, produced a Zambesi Black in every way equal to the product which the Germans had been sending over in the days of long ago. Was it pounced upon with delighted cries by the consumers? No, Reader, the great trouble has been to find a market for it, because most of the consumers informed the manufacturer that since they had succeeded in getting their customers used to an inferior color,

what would be the point in paying a higher price for the better article?

What, indeed! This last instance, however, shows a specimen of the ugly framework upon which large numbers of a still skeptical public can conveniently hang an indictment of the American dye industry. When some of the textile manufacturers were learning to use American dyes, they found that the public would excuse almost anything in the way of shortcomings if told that the goods were dyed with American dyes and that American dyes were—well, you know; what can you expect of them, anyway! It was a masterly method of stepping from under and letting the full force of public censure come back upon the dye manufacturers. And when the latter at last began offering superior dyes, at prices naturally higher, the textile manufacturers to which we refer decided that it would be profitable to keep the popular superstition about American dyes alive a little longer.

But it is a vicious practice and one which, happily, will some day wear itself out by its own friction.

NICHOLS MEDAL GOES TO DR. G. N. LEWIS

One of the highest honors of American chemistry, the William H. Nichols Medal for 1920, was bestowed Friday evening upon Dr. Gilbert N. Lewis, Dean of Chemistry of the University of California at Berkeley. The presentation was made at a meeting of the New York Section of the American Chemical Society held in Rumford Hall at 50 East Forty-first Street.

The medal, which was founded by Dr. William H. Nichols, the well-known chemical industrialist and past president of the society, was given for the best paper published in 1920 in the three journals of the society. The paper of which Dr. Lewis is the author is entitled, "The Third Law of Thermodynamics and the Entropy of Solutions and of Liquids." The achievements of

Dr. Lewis in science were described by Drs. Arthur B. Lamb and John Johnston, and the medal was presented by Dr. John E. Teeple, chairman of the New York Section. In accepting the honor Dr. Lewis delivered an address entitled "Color and Molecular Structure."

The latest recipient of the Nichols Medal was born in Weymouth, Mass., near Boston, in 1875. He studied at the University of Nebraska and in 1896 was graduated from Harvard University, from which institution three years later he received his doctor's degree. After studying chemistry at the universities of Leipzig and Göttingen he returned to Harvard as an instructor in chemistry. In 1911 he was chosen professor in chemistry at the Massachusetts Institute of Technology and in 1912 went to the University of California.

Dr. Lewis in 1918 was appointed a major in the U. S. Army, A. E. F., and served as chief of the Defense Division of the Gas Service. His services were recognized by the French Government, which made him a Chevalier of the Legion of Honor.

W. T. B. APRIL LICENSES

(Continued from page 9.)

Designation of Dye	England (lbs.)
Pigment Yellow GL 40% Paste...	100
Thinol Brown R.....	2,500
Total	18,400

Designation of Dye	France (lbs.)
Naphthalene Green NV.....	5,000
Rhodamine B Extra.....	110
Total	5,110

Note (by request of the War Trade Board)—Licenses shown by this list to have been issued for particular commodities must not be considered as a precedent or assurance that favorable action will be taken on future applications for similar commodities. The War Trade Board Section announced in special cases that it is its practice to consider any special evidence that may be submitted

by manufacturing consumers of dyestuffs tending to prove that the American commodity, while satisfactory in general or for some lines, will not meet the requirements as to quality or adaptability for particular manufacturing purposes.

Designation of Dye	Germany (lbs.)	Switzerland (lbs.)
Acid Aliz. Blue BB.....	200	..
Acid Violet 4BNS.....	..	1,000
Acid Wool Blue RL.....	..	5,000
Algol Blue 3G	1,000	..
Algol Brill. Red 2B.....	1,000	..
Algol Brill. Red 2B Pdr..	52	..
Algol Brill. Violet 2B		
Paste	500	..
Algol Brown B	1,000	..
Algol Brown R	1,500	..
Algol Red B Paste.....	110	..
Algol Red FF	500	..
Algol Red FF Extra.....	1,000	..
Aliz. Astrole B Conc.....	400	..
Alizarine Black 3B.....	500	..
Alizarine Blue Black B...	2,740	..
Alizarine Blue S.....	200	..
Alizarine Blue SAP.....	..	720
Alizarine Blue SAWSA..	100	..
Alizarine Blue SKY.....	400	..
Aliz. Bordeaux GX Paste	100	..
Alizarine Cyanine Green		
Extra Powder	1,500	..
Alizarine Cyanol EF.....	25	..
Aliz. Indigo BB Paste...	2,500	..
Aliz. Indigo 3R Paste...	800	..
Aliz. Irisole R Powder...	205	..
Aliz. Light Blue B.....	..	1,000
Aliz. Red S Powder.....	100	..
Aliz. Rubinol R	50	..
Aliz. Rubinol R Conc.....	1,000	..
Aliz. Safrinol B Powder...	1,700	..
Aliz. Sky Blue B.....	1,000	..
Aliz. Sky Blue B Powder	200	..
Anthosine B	500	..
Anthosine 3B	500	..
Anthra Cyanine .....	..	110
Anthraflavone GC Paste..	200	..
Azo Acid Blue B.....	..	2,220
Azo Carmine GX	100	..
Azo Cyanine GR	125	..
Azo Orseille BB	2	..
Azo Orseille 5B	2	..
Azo Rhodine 6B .....	..	500
Azo Rhodine 2G .....	..	2,500
Benzo Chrome Brown G.	1,000	..
Benzo Fast Black L	1,000	..
Benzo Fast Blue FFL ...	600	..
Benzo Fast Blue G	250	..
Benzo Fast Blue 2GL	50	..
Benzo Fast, Blue 4GL ...	250	..
Benzo Fast Bordeaux 6BL	2,425	..

Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)	Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)
Benzo Fast Brown 3GL ..	100	..	Diamine Fast Blue FFG..	2,000	..
Benzo Fast Brown RL ..	2,050	..	Diamine Fast Blue G	250	..
Benzo Fast Eosin BL ...	10	..	Diamine Fast Brown GB.	400	..
Benzo Fast Heliotrope			Diamine Fast Brown R ..	200	..
4BL	175	..	Diamine Fast Orange EG	600	..
Benzo Fast Heliotrope			Diamine Fast Orange ER	400	..
2RL	425	..	Diamine Fast Red 8BL..	650	..
Benzo Fast Heliotrope			Diamine Fast Violet FFR	400	..
5RH	500	..	Diamine Fast Yellow B..	400	..
Benzo Fast Orange 2RL.	700	..	Diamine Fast Yellow FF.	600	..
Benzo Fast Pink 2BL ...	25	..	Diamine Yellow N.....	500	..
Benzo Fast Red 8BL ...	1,200	..	Diazo Brill. Black B	700	..
Benzo Fast Yellow 4GL			Diazo Brill. Orange GR		
Extra	10	..	Extra	100	..
Benzo Fast Yellow RL ..	600	..	Diazo Brilliant Scarlet		
Benzo Red 12B	100	..	2BL Extra	300	..
Brill. Benzo Green B....	150	..	Diazo Brill. Scarlet 3B Ex.	50	..
Brill. Benzo Violet B....	500	..	Diazo Brill. Scarlet 6B Ex.	200	..
Brill. Croceine 5BA Conc.	1,000	..	Diazo Brown G	100	..
Brill. Delphine Blue BS..	..	2,500	Diazo Brown 3G	100	..
Brill. Fast Blue 3BX....	1,100	..	Diazo Brown NR	100	..
Brill. Fast Blue 4G.....	2,000	..	Diazo Fast Red 5BL	100	..
Brill. Milling Blue B....	174	..	Diazo Fast Scarlet BL ..	200	..
Brill. Red R Paste.....	10,000	..	Diazo Fast Yellow G ...	150	..
Brill. Sky Blue 8G.....	150	..	Diazo Fast Yellow 2G ..	70	..
Carbide Black E Conc....	..	11,000	Diazo Fast Yellow R ...	25	..
Chinoline Yellow .....	..	2,000	Diazo Indigo Blue 2RL..	973	..
Chloramine Red 8B Conc.	..	1,000	Diazo Pure Blue 3G.....	3,000	..
Chromanile Black FF Ex.	300	..	Delphine Blue RK.....	250	..
Ciba Blue BD Paste.....	..	33,000	Diphenyl Fast Brown GF	..	2,000
Ciba Blue 2BD Paste....	..	11,000	Direct Cutch Brown GR		
Ciba Violet B Powder...	..	35	Conc. ....	..	2,200
Ciba Violet R Paste....	..	2,765	Erika B .....	..	2,000
Cloth Fast Blue R.....	..	5,500	Erio Chrome Black A...	..	47,000
Coriphosphine OX Extra	200	..	Erio Chrome Green .....	..	2,000
Cyananthrol BGAOO ...	809	..	Eriocyanine A .....	..	7,000
Cyananthrol RXO	100	..	Erio Glaucine A501.....	..	1,000
Cyanol Extra	734	..	Ethyl Violet Conc.....	200	..
Cyanol AB	64	..	Fast Acid Marine Blue		
Cyanol BSB	18	..	HBBX	10	..
Cyanol FF	142	..	Fast Garnet G Base.....	100	..
Cyanol Extra MKH	46	..	Fast Green Extra Bluish.	4,400	..
Developer B	300	..	Fast Light Yellow 3G....	100	..
Developer Z	75	..	Fast Orange R	440	..
Diamine Brown B	200	..	Fast Orange R Base.....	440	..
Diamine Catechine 3G ..	2,000	..	Fast Red G Base.....	11,000	..
Diamine Fast Blue FFB.	600	..	Fast Red GL Base.....	886	..

Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)	Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)
Fast Scarlet G Base.....	880	..	Permanent Red 4B Ex...	2,500	..
Fast Scarlet R Base.....	880	..	Permanent Red 4R	2,000	..
Formic Black C Conc....	..	1,000	Polyphenyl Yellow .....	..	2,000
Formic Black TG Conc..	..	1,000	Protectol I	200	..
Formyl Violet 10B.....	1	..	Protectol Agfa I	100	..
Gallocyanine Paste .....	..	4,000	Protectol Agfa II	100	..
Guinea Fast Green B.....	500	..	Pyrazol Orange G.....	..	4,000
Hansa Yellow G Paste...	2,000	..	Rapid Fast Red GL Paste	490	..
Helindone Fast Scarlet R			Rhodamine B Base.....	..	660
Powder	46	..	Rhodamine 6GDN Extra.	5	..
Helindone Orange R			Rose Bengal .....	..	1,045
Paste	200	..	Rose Bengale NTO.....	10	..
Helindone Pink AN 10%.	100	..	Rose Induline 2B.....	20	..
Helindone Pink BN	500	..	Saba Phosphine 2G Conc.	..	1,000
Hydron Blue G Paste....	500	..	Soluble Blue TL.....	100	..
Indan. Blue GCD	2,500	..	Supramine Black BR Pdr.	50	..
Indan. Blue GCD Paste...	4,575	..	Tartrazine Conc. Pure...	..	3,000
Indan. Blue GCD Double			Thionol Sulphur Yellow G	..	1,100
Paste	5,000	..	Thional Yellow G.....	..	2,000
Indan. Blue 3G Paste....	100	..	Toluyene Red	110	..
Indan. Bordeaux B Ex....	330	..	Turquoise Blue B.....	25	..
Indan. Claret B Ex.....	25	..	Ursol Brown 2GA	300	..
Indan. Golden Orange G	2,000	..	Ursol Grey AL	300	..
Indan. Golden Orange			Ursol Grey B	200	..
GDBL	795	..	Ursol Grey R	200	..
Indan. Golden Orange			Ursol SLA	225	..
RRT	2,100	..	Victoria Blue B Base....	..	1,100
Indan. Pink B Double....	100	..	Victoria Pure Blue B Base	1	..
Indan. Red BN Ex. Paste	100	..	Viridine Green Color....	600	..
Indan. Violet BN Ex....	200	..	Wool Blue 5B	400	..
Indan. Violet BN Ex.			Wool Fast Blue BL Conc.	81	..
Paste	200	..	Wool Fast Marine Blue BB	50	..
Indan. Violet RR Ex....	1,000	..	Wool Green S .....	..	2,000
Indan. Violet RR Ex.			Xylene Blue VS .....	..	2,000
Paste for printing.....	1,000	..	Xylene Light Yellow GG	..	1,100
Indan. Yellow G Paste....	50	..	Xylene Light Yellow 2G.	..	6,840
Indan. Yellow G Double..	1,000	..	Xylene Yellow 2G .....	..	127
Indigo MLB 6B	200	..	Xylene Yellow 3G .....	..	9
Indigo MLB 6B Powder..	300	..			
Indochromine T .....	..	2,500			
Kiton Red 6B.....	..	3,000	Totals	148,502	190,751
Kiton Yellow S.....	..	3,000			
Leukotrop W Conc.....	3,000	..			
Lithol Fast Orange R Pdr.	200	..			
Lithol Red GG	1,000	..			
Lithol Rubine BN	3,100	..			
Lithol Rubine BN Pdr...	200	..			
Methylene Blue BG Conc.	..	1,000			
Methylene Heliotrope O.	200	..			
Milling Red 6BA.....	220	..			
Naphthogene Blue 2R....	220	..			
Naphthogene Blue 4R....	220	..			
Naphthol AS	12,316	..			
Naphthol BS	440	..			
Orange IV Powder.....	..	2,000			
Ordoval G	2,800	..			
Patent Blue A.....	1,000	..			
Patent Phosphine M Conc.	..	220			
Permanent Red 4B	4,000	..			

KNIT GOODS SHOW BREAKS OWN RECORD

The exhibition of the National Association of Hosiery and Underwear Manufacturers which opened in the Commercial Museum, Philadelphia, last week, proved to be the largest and most complete in the history of the organization. In view of the uncertainties through which the knit goods trade has passed in recent months, it was felt that all interests should pull together in an effort to make a display which would reflect the spirit of optimism which prevails in the trade.

S. D. Bausher, president of the Association, declared himself extremely pleased over the showing that was made. More than two hundred exhibits of firms from all over the country were shown at the exposition this year.

BEARING OF A SYNTHETIC DYE INDUSTRY UPON OUR NATIONAL WELFARE

(Continued from last week.)

It is appropriate to point out that this situation is not due to any actual deficiency of anthracene as measured by the sum total present in our tar, nor to any grave technical obstacles to its recovery from a chemical or engineering standpoint, but is directly referable to the fact that its removal by the present method leaves the pitch so hard that it does not find a ready market here, and this makes the anthracene carry all the cost, and the dyes prepared from it would consequently be so expensive that they could not hope to compete with similar products from Germany or England, where hard pitch is readily salable for briquetting coal dust and coke breeze. The problem is one of the most important confronting our dye industry and is being vigorously attacked both by the tar distillers and by the organic chemist, the latter investigating the various methods by which anthraquinone, the most important of the anthracene intermediates, can be made from benzole and a naphthalene derivative (phthalic anhydride). Some success has already crowned efforts of the latter type, and one concern is already manufacturing this anthracene intermediate synthetically on a commercial scale.

When anthracene itself is available, this intermediate is easily produced by oxidation of the former. It is the mother-substance of such valuable classes of dyes as the alizarins (Turkey Red, etc.), indanthrenes, etc., which are of especial service in the dyeing of cotton shirtings, gingham and calicoes.

The alizarin so prepared is the same as the alizarin obtained in years gone by from madder. This synthesis has already been alluded to, and it was the

death knell of the madder industry. In the ten years following this discovery, the output of natural alizarin fell from 500,000 tons per annum to less than 500, and this too in spite of attempted protective legislation on the part of the French Government, for the industry was largely a French one, decreeing that no trousers should be accepted for the French soldiers unless their brilliant red had been produced with natural madder.

METHYL ANTHRACENE AND PHENANTHRENE

These are relatively unimportant, since they are not yet obtainable in large amounts or at low prices.

Methyl anthracene bears the same relationship to anthracene that toluene does to benzole.

Phenanthrene belongs to a slightly different family, and is of interest also to the pharmaceutical chemist, as it is the mother-substance of the wonderful alkaloid morphine, as well as of certain other alkaloids, but as yet no method has been devised of building them up synthetically from this crude.

CARBOLIC ACID (PHENOL)

The foregoing six crudes belong to the class of compounds known as hydrocarbons, since they are all composed of but two elements, carbon and hydrogen, which are present in varying amounts and united in quite different ways. Carbolic acid, however, contains oxygen as well as carbon and hy-

drogen and, as its name indicates, possesses acid properties, while the hydrocarbons are neutral and indifferent bodies. Further, it is both a crude and an intermediate; a crude in that it can be separated from coal tar by distillation and purification; an intermediate in that it is prepared synthetically from benzole, as already stated. During the war, when the supply of toluene available was insufficient to provide all the T. N. T. required for bursting charges in shells, mines and torpedoes, recourse was had to picric acid, the raw material for which is carbollic acid. As the amount of carbollic obtained from coal tar was unequal to the task, huge plants were erected by the Government to manufacture it synthetically, the methods most widely employed consisting either in treating the benzole first with sulphuric acid and fusing the product with caustic soda or, when the supply of sulphuric acid also threatened to give out, by chlorinating the benzole first, then nitrating, boiling this product with lime and finally nitrating again. The result of establishing these great plants was an output in 1918 of 106,794,277 pounds of carbollic acid and when the war demand ceased and these plants were closed, a surplus stock of about 35,000,000 pounds was left on the Government's hands. This surplus hanging over the market forced the production for 1919 down to 1,543,659 pounds, and meant a drop in the total value of annual output from \$37,270,284 to \$155,624.

Picric acid, by the way, is the basis of the English lyddite, and the French melinite powders. It is a strong yellow dye, and was used for this purpose centuries before its power as an explosive was discovered; in fact, it is the oldest of all artificial organic dyes. In 1711, Woulfe found that by the action of nitric acid upon indigo, a liquid was obtained which dyed silk yellow, and this product was later shown to be picric acid. It was not until 1871 that Sprengel called attention to the fact that picric acid could be detonated, but no application of this observation was made until Turpin, in 1886, proposed its use as a bursting charge for shells.

Chloropicrin, one of the deadly war gases used in considerable amounts by both sides in the recent war, is manufactured by boiling picric acid with bleaching powder in water solution.

The therapeutic properties of carbollic acid are familiar to all of us, and its extensive employment as a general disinfectant and antiseptic.

When carbollic acid is treated first to a dose of caustic soda and then chloroformed, it is transformed into two new substances; one of which is readily changed into a perfume with the odor of the blooming hawthorn and hence sold under the name Aubepine, from the French name for the hawthorn. The other has a faint but pleasing odor, and occurs in the blossoms of the spirea (*ulmaria*). By coupling it with the acid found in vinegar (acetic acid), it forms the perfume substance called coumarin, the compound to which the odor of the woodruff and the sweet clover are due, and which is the odoriferous and gustiferous principle of the tonka beans. These latter are often mixed with vanilla beans, because of their vanilla-like flavor and aroma, in the preparation of the natural vanilla extracts, as they give to the extract a rather pleasanter bouquet. As the organic chemist can synthesize the important component of vanilla beans by starting with wood tar, it is entirely within his power to fabricate a high-grade vanilla extract of fine bouquet, in which the alcohol has been made from limestone and coke, or possibly from sawdust, the vanilla from wood tar and the bouquet from coal tar. Courmarin is the basis also of most "new-mown hay" perfumes.

If, instead of chloroforming our carbollic acid after its caustic soda treatment, we bake it in presence of the gas which bubbles up in our soda water, the product is the familiar silicylic acid, so extensively employed as a remedy, either in the form of the acid itself, its salts, or such derivatives as aspirin, salol, salophen, and the like, in cases of rheumatism, grippe, headaches and fevers, and also made use of as a food preservative and for the manufacture of many dyes. I have already shown

you how we can combine this rheumatism acid with wood alcohol and produce the synthetic oil of wintergreen.

But let us vary once more the method of attack, and subject our carbolic acid to the action of dilute nitric acid. The result will again be two distinct and new products; one of which yield dyes and other derivatives of commercial value, while from the other one, the valuable drug phenacetin is manufactured

Under the influence of a somewhat stronger nitric acid, carbolic acid yields an intermediate which may be converted on the one hand into picric acid, or on the other into Sulphur Black, a dye which is consumed in the United States in larger amounts than any other, over 14,500,000 pounds having been produced here in 1919 by thirteen different manufacturers, and some of their brands being admittedly superior to the finest products imported from Germany prior to the war. With a still stronger nitric acid, assisted by some concentrated sulphuric acid, carbolic passes into picric acid, which has been discussed before.

The synthetic resins of the bakelite, condensite and redmanol type, are prepared for carbolic acid (or cresol) and formaldehyde (or closely related compounds). These synthetic resins have found a wide sphere of usefulness as substitute for hard rubber, since they can be filled, molded, machined, etc., and have a high dielectric constant. Synthetic tannins of the neradol class are prepared from these same initial materials.

The mild laxative, phenolphthalein, is likewise a carbolic derivative.

(To be continued.)

NOTES OF THE TRADE

Originally scheduled to take place April 25, the first annual meeting of the Allied Chemical & Dye Corporation has been postponed to May 23, according to a recent announcement which declares that it was found impracticable to complete the audit of 1920 accounts of constituent compa-

nies soon enough to permit the publication of the first annual report in time for the former date.

The medals committee of the National Association of Cotton Manufacturer has awarded the 1921 medal of the organization to Dr. Melvin T. Copeland, director of the Bureau of Business Research, Harvard University, "for his noteworthy work in recent years as an international statistician, and also in recognition of his earlier work as a writer on textile subjects."

Announcement has been made by Eugene Suter & Co. to the effect that this firm has moved its headquarters from 120 Broadway, New York City, to 160 Broadway

A recent special cable to the "Journal of Commerce," New York, from Frankfort on the Main, states that German export duties on dyestuffs, "especially aniline, alizarine, indigo and sulphur," have been suspended.

CALCO OPENS PHILADELPHIA OFFICE

Announcement has been made to users of intermediates and dyestuffs to the effect that the Calco Chemical Company, of Bound Brook, N. J., has opened a Philadelphia office at 106 Chestnut Street, that city.

This office will carry a stock of the entire Calco line of Dyestuffs and In-

intermediates. The purpose of the company in establishing this branch with a complete sales organization, is to enable them to be more closely in touch with the Philadelphia trade and to insure prompt delivery of all orders.

CORNELL TO HAVE \$1,500,000 CHEMISTRY "LAB."

Authority to advertise for bids for the construction of the \$1,500,000 chemical laboratory was granted at a recent meeting of the board of trustees of Cornell University.

Plans for the chemistry building have been awaiting the approval of the board for some time, the money having been given by an anonymous donor two years ago, shortly after the burning of the old chemical building. The new building will be constructed on the site formerly occupied by the homes of former President J. G. Schurman, Prof. C. L. Durham and Prof. Ernest Merritt on East Avenue. The new laboratory will be, it is said, the best equipped in the world as well as one of the largest. Work will probably be begun before the end of the present term and will be completed within a year's time.

Dye-a-Grams

Wool Green SO is an excellent domestic product and equal in every respect to the imported Wool Green S!

Professor recently stated that slang has its place. No doubt about it. In

fact, it comes very near to copping the place language once had!

—o—

Something has happened to the market, for Wool Green S. . . . Just SO!

—o—

FURS SHOW SHARP ADVANCE—*Headline*. With the season for furs so near at hand, this was to be expected.

—o—

The Chemical Warfare Service has a poison so powerful that three drops will kill anyone whose skin it touches. —*News item*. Must be from a boot-legger's formula!

—o—

In the spring one's fancy is likely to turn to almost anything—except work. Must be that this is what is again affecting Congress.

—o—

There is no doubt but that Uncle Sam's foreign relations are poor relations!

—o—

And now, Professor, if you'll kindly oblige with a little soft music—

Sunday brought rest from endeavor;
Monday we'd orders galore;
Tuesday, however, believing it clever,
They canceled of orders a score
(Or more)
They canceled of orders a score.

Wednesday they wanted goods hurried;
Thursday they wired to annul—
Friday was flurried; we scurried and worried;
Saturday showed us a lull
(How dull!)
Saturday showed us a lull.

Talk about strife and contention—
The mill man gets plenty in *his*!
Ain't this dissension some place we might mention?
Brother, we'll say that it is
(Gee whizz!)
Brother, we'll claim that it is!

G. E. T.



AMERICAN DYESTUFF REPORTER

Vol. VIII, No. 20

May 16, 1921



THIS ISSUE IS THE MAY
EXPORT NUMBER

The Dye and Chemical Control Act

Present Status of American Coal-Tar Industries to Remain Unchanged Pending Action on Permanent Measure

Hot-House Plants—The Five Editorials

Foreign Trade Opportunities

AMERICAN DYE STUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

New York, May 16, 1921

No. 20

THE DYE AND CHEMICAL CONTROL ACT

Present Status of American Coal-Tar Industries to Remain Unchanged Pending Action on Permanent Measure

WITH Senator Moses recorded as the only Republican opposing it, and with seven of the Democratic Senators supporting it, the Fordney Emergency Tariff bill, carrying with it the Dye and Chemical Control Act for the continuance of the present form of dye protection for another six months—and transferring the protective powers of the War Trade Board, which will now cease to exist, to the Treasury Department—passed the Senate last Wednesday by a vote of sixty-three to twenty-eight. Only five Senators were recorded as not voting.

This measure is the Knox amendment to the Fordney bill, and is already familiar to readers of The REPORTER, a transcription of it having been given in the issue of two weeks ago. Its acceptance and passage by the Senate is both timely and fortunate for the dye industry, which was facing a period of complete exposure to the assaults of the German industry by reason of the impending dissolution of the War Trade Board. It would have been just the chance which the Cartel has been looking for, and it is safe to

say that had the industry been obliged to face the attack which would immediately have been launched against it with all the vigor at Germany's command, it would have been dealt a blow from which it would have had some difficulty in recovering by the time Congress could finally enact the permanent tariff measure which is to include the Longworth Selective Embargo provision. Like the Penrose resolution of more than a year ago, the new Dye and Chemical Control Act is designed solely to bridge the gap between the removal of special war protection and the probable granting of special peace protection later on. It is not final in any sense of the word, and, moreover, at the present writing the whole measure must yet be taken up at a conference of representatives of the House and the Senate, although there is no reason to suppose that it will be shorn of its effectiveness as a result of this meeting.

Those seeking a simple and fairly good analogy for the situation may find it in the case of a convalescing patient who has just passed through a very critical illness and who is being kept

indoors. A consultation of specialists, let us say, has been set for the following week to decide whether the patient must stay at home for a longer period or may fare forth to participate in the business life of the city. The medicos are divided in their opinions as to the better course, but pending the final decision you may be sure that none will care to take the responsibility of ordering the patient out of doors, and that is precisely the responsibility which the Senate—quite justifiably—did not want to take. By its action it neither indorsed special protection for the dye industry nor condemned it; our Solons merely said, in effect: "Here, we are coming to this question just as soon as the new measure can be got ready; in the mean time we will allow things to remain as they are. If they are wrong we can easily change them later on, and if right we can continue them."

At the same time, the industry is to be congratulated on the fact that the Senate again has seen fit to extend the period of war-born protection, and it is the opinion of this publication that the action of last Wednesday may be interpreted as most encouraging, for reasons which appear to have been overlooked by some who have recently commented thereon.

It is argued that the Dye and Chemical Control act was merely a "rider" of the Fordney bill, and that some of the Senators temporarily buried their opposition to granting the industry even temporary protection because they wanted to vote for the principal measure. In other words, there is no guarantee that all the Senators who voted for the Fordney measure will vote for the new Longworth bill when it comes before them.

This is undeniable, but we are given a much better index of the sentiments of our Senators by a separate vote on the question of the adoption of the Knox amendment. The chance for its elimination from the present scheme of things came on Wednesday, shortly before the final vote on the bill itself was taken, and the Senate voted sixty-one to twenty-five (ten not voting) to re-

tain it as Title V of the bill. The lineup on this question is significant, and because it will be interesting to readers when the time for adoption or rejection of the permanent measure arrives, we give it here:

Yeas (61)—Ashurst, Ball, Brandegee, Broussard, Bursum, Cameron, Capper, Colt, Cummins, Curtis, Dillingham, Edge, Elkins, Ernst, Fernald, France, Frelinghuysen, Glass, Gooding, Hale, Harrel, Heflin, Johnson, Jones (N. Mex.), Jones (Wash.), Kellogg, Kendrick, Knox, Ladd, Lenroot, McCormick, McCumber, McKellar, McKinley, McLean, McNary, Nelson, New, Newberry, Nicholson, Norris, Oddie, Overman, Phipps, Poindexter, Ransdell, Robinson, Sheppard, Shortridge, Simmons, Spencer, Stanfield, Sterling, Sutherland, Swanson, Townsend, Wadsworth, Warren, Watson (Ind.), Willis, Wolcott.

Nays (25)—Borah, Caraway, Culberson, Dial, Fletcher, Gerry, Harris, Harrison, Hitchcock, Kenyon, Keyes, King, La Follette, Moses, Myers, Pittman, Pomerene, Shields, Smith, Smoot, Stanley, Trammell, Walsh (Mass.), Walsh (Mont.), Watson (Ga.).

Not voting (10)—Calder, Lodge, Norbeck, Owen, Page, Penrose, Reed, Underwood, Weller, Williams.

Now, the point we raise is this: Theoretically the Senators who voted to retain the amendment signified, in an entirely cold-blooded and official manner, their recognition of the dye industry as a pending problem to be settled later; actually, however, these men had heard the same old debate over the issue many times before and had had more pages of both support and opposition recited to them than they'll ever want to hear again. Most of them probably had formed settled opinions one way or the other long ere that day, but had been prevented from expressing them by the filibuster of former Senator Thomas. Therefore, if a majority of them had come to believe special protection unnecessary, they had a grand chance then and there to prove it by leaving the industry exposed until the Longworth meas-

ure should arrive for debate. In recording their recognition of the fact that it would be unfair to leave the dye industry temporarily unprotected, they implied a recognition of the fact that it would be positively unsafe to do so. Had they believed the industry to have reached a point where it was capable of paddling its own canoe, they would have been more than human if they had not jumped at the opportunity to say "I told you so!" by leaving the Knox amendment out of the Fordney bill. Had they even been vacillating, it is more than likely that they would have been won over to the side of those who cannot see why protection is necessary by the efforts of Senators Moses, King and Gilbert M. Hitchcock of Nebraska.

For during the last few days of the debate over the Fordney bill, the American dye industry and its plea for protection was made the object of one of the bitterest and at the same time one of the most futile attacks in its legislative history. And here again one may catch sight of a significant fact beneath the surface. Senator Moses admitted that his sole reason for voting against the Fordney bill was the presence therein of the Knox amendment. Presumably, then, Senator Moses' constituents wanted the Fordney bill and did not want the Dye and Chemical Control act. His duty was to give expression to their wishes by his votes. He could have voted against the inclusion of the amendment (which he did) and then have voted for the Fordney bill

with a clear conscience. Voting for the amendment under such circumstances would not have bound him to vote for the Longworth measure, in which the *real* hope of the industry lies, nor committed him in any way to the policy of protection for the dye industry. Moreover, he knew that his vote would not change the result, for on Monday he said during the course of his remarks: "Mr. President, I am well aware that this bill will pass."

Why, then, was Senator Moses so mortally afraid to be caught voting for the dye measure that he could not even support a bill which his people wanted, when such support would have been thoroughly understood by any reasonable-minded constituent? Why should he feel compelled to cause himself so much annoyance as he asserted his inability to cast his vote for the Fordney bill occasioned him, when the casting of that vote was to have no bearing whatever on the ultimate dye decision?

We can boldly answer our own question by saying, frankly, that we don't know.

Do you?

However, to resume: There was some bitter opposition unleashed in the Senate Chamber as the bill progressed through its various stages, and in connection with this we want to correct an error made by the Washington correspondent of the "Journal of Commerce," who stated in his wire that "Senator Simmons moved to strike out the first half of the dye amendment."

Senator Simmons did nothing of the

sort. It was Senator King, and his motion, following another to strike out the whole amendment, which he afterward withdrew in favor of the less drastic, was lost by a vote of sixty-three to twenty-five, with eight not voting. Before the "Journal of Commerce" man succeeds in untangling his story in the issue of Thursday, May 12, he places Senator Simmons' name in the column with those voting against his own motion!

What his real activities consisted of was a motion to strike out Titles II, III and IV, the anti-dumping and valuation provisions (which motion was lost) and a very effective reply to Senator Hitchcock's tirade after the bill had been passed. He would have spoken sooner, but during the proceedings he tried three times to gain the floor and was unsuccessful.

On Monday Senator Moses lifted up his voice in his stereotyped attack on the dye industry in general and the measure to come before the Senate in particular. But since it was the one left over from the Thomas-King-Moses partnership of the last session, it lacked pith and variety—which may have accounted for the conversation which took place after his opening remarks:

Senator Harrison (interrupting)—"Mr. President, will the Senator yield?"

The Presiding Officer (wistfully)—"Does the Senator from New Hampshire yield to the Senator from Mississippi?"

Senator Moses—"Yes, sir."

Mr. Harrison—"The Senator is delivering such an interesting address and there are so few Senators present that I suggest the absence of a quorum."

Mr. Moses—"Oh, Mr. President, I hope the Senator will not press that suggestion."

Mr. Harrison (doggedly)—"I suggest the absence of a quorum."

Presiding Officer—"The Senator from New Hampshire has the floor, and cannot be interrupted without his consent even for the suggestion of the absence of a quorum."

Mr. Moses—"I did not yield for that

purpose, Mr. President. I wish to finish my remarks with continuity."

Mr. Harrison—"Very well; I withdraw the suggestion."

Mr. Moses—"I know the Senator from Mississippi is vastly interested in what I am saying. I hope he will stay even though others may be absent."

Mr. Harrison—"I am going to stay, but I had hoped that more Republicans would be here so that they could listen to the advice the Senator is giving."

Mr. Moses—"They can read my remarks" (Continues address).

We shall take up this address in greater detail next week, but for the present he it recorded that Mr. Moses charged the dye industry with about everything he could think of and methodically objected to about everything in connection with the Knox amendment except the brand of paper on which it was engrossed. He also paid his respects to The REPORTER, quoting the concluding stanza of the doggerel which appeared two weeks ago as an instance of the extremes of disgusting familiarity these here editors will affect to enjoy with persons in high places. He concluded his address with a fine burst of party oratory.

He was ably and effectively answered by Senator Knox, who brought the question back to the basis upon which it really rests—the military efficiency of this country.

On Wednesday, after Title V had been agreed to, Senator King arose for his turn and expressed great disappointment in the Republican party for its support of such "vicious and un-American" legislation. Senator Hitchcock likewise spoke feelingly on the subject of party politics, after which Senator Knox again drew the subject back into the world of practical affairs. Senator Simmons then offered a talk on the purpose of the measure just enacted, a quotation from which is here given because it furnishes an excellent statement of the real purpose of the Knox amendment:

"In that situation, upon the recommendation and request of Woodrow Wilson, then President of the United States, we were called upon to act, by adopting the law the operation of which this provision extends for six months. The case presented itself to us not as a tariff question at all but as a question of national preparedness and national defense; and without party divisions in this Chamber or in Congress we enacted the legislation which it is now claimed built up a trust which that enactment subsidizes. If we had not enacted that legislation, in my opinion, it is doubtful if we could have won the war.

"It is a mistake to suppose that this provision of the bill changes that law. It does not. Not one line or one syllable is stricken out of or added to the Democratic enactment, then adopted for the national defense and imperatively demanded by the necessities and emergencies of that situation. . . .

"Mr. President, I think it is the sense of this country that we have not yet reached that point in the development of the dye industry in this country where it is able adequately to meet the requirements of preparedness in case of war; so that, as I regard it and as I think it ought to be regarded, this is a mere extension of a provision necessary to the national defense until we can have reasonable time to develop that industry to the point of making it adequate to supply our demands in case of hostilities between this country and some other country in the world. It is important that we are prepared for all eventualities and that we propose to continue that state of preparedness.

"It is not now, as it was not when we enacted it, a question of tariff. It is a question of national preparedness and national defense."

KILLHEFFER RETURNS TO AMERICA

Elvin H. Killheffer, vice-president of the Newport Chemical Works, Inc., arrived in Vancouver May 16 on the S. S. Empress of Russia, after an extended trip throughout the Orient in the interests of his company. Through his efforts the company has established permanent offices at 6A Kiangse Road, Shanghai, China, from which point their Chinese trade will be handled. Mr. Killheffer is expected to arrive at the home office in Pas-saic, U. J., later this month.

"Darco" is the trade name of the new variety of carbon which the Atlas Powder Company is at present making plans to manufacture at Wilmington under the name of the Darco Corporation. It is claimed that this new product will not only speed up but also cheapen the decolorizing and refining processes used in many industries.

Projects contemplating an advance of 30,000,000 yen by the Japanese Government to assist the silk industry were debated in the House of Peers in Tokio recently, members of that body questioning the practicability of plans being considered. Premier Hara is defending the idea of such an advance.

AMERICAN DYESTUFF REPORTER

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Pointed solely toward the welfare and growth
 of the American Dyestuff Industry. Unbiased
 contributions appreciated.

A. P. HOWES, President
 LAURANCE T. CLARK, Editor

HOT-HOUSE PLANTS

Now that the first report of the Alkied Chemical & Dye Corporation shows earnings of \$6.33 a share on common stock after allowing for 7 per cent preferred dividend requirements—or a net income of \$16,179,939—you may expect to see the opposers of protection for the dye industry fall like a pack of hungry wolves on these figures and attempt to prove by them that any industry which can pay dividends needs no help, Governmental or otherwise.

What these figures prove is that Alkied Chemical & Dye had a net income of \$16,179,939. When these gentlemen have recited that fact, they are through. That is as far as that particular train of thought will take them.

The point to bear in mind is that these earnings were made under an artificial protection the removal of which would knock next year's earnings of this and other dye producers into a cocked hat. In other words, the industry has been going well enough but not long enough. There is no inherent strength in these figures, such as can be found in those of an industry so firmly entrenched as to be master of its own field.

The time will come when the dye industry, provided it is taken care of, will be able to stand on its own feet with the best of them. But just now, however, there are still too many gaps in its repertoire and too little accomplished in the way of building for the future, to permit of its stand-

ing successfully against the buffets which forty-five years of experience can deal out. Just remember that these figures are of the hot-house, not the hardy, variety; that the plants of the dye industry are hot-house plants and that they would quickly wither if exposed to the German elements before they have attained that ruggedness which time alone can give.

And also remember that if the dye industry could have been allowed to feel certain of its future during the past years, instead of being kept in a state of uncertainty which has scared away much additional capital, it would to-day be much further along in its progress toward that necessary ruggedness.

THE FIVE

After the Fordney Emergency Tariff bill was passed by the Senate last Wednesday, Mr. Penrose moved that the House be asked for a conference on the bill and amendment, and he, together with Senators McCumber, Smoot, Simmons and Williams, were the five men selected to uphold the Senatorial end of the coming proceedings. This being the case, the first thing which occurs to the reader is to ask: How did these men vote on the subject?

Messrs. Penrose, McCumber and Smoot are Republicans, and all three voted for the bill as a whole; while Messrs. Simmons and Williams, Democrats, voted against it. Nevertheless, that does not tell the whole story, which gives you the same figures—three with the industry and two against—but not the same personnel.

Senator Penrose was away when the Senate voted to agree to the inclusion of the Dye and Chemical Control act in the tariff bill, but being paired with Senator Williams, he was recorded as voting "Yea." He voted "Nay" on Senator King's motion to strike out the first half of the act. For the rest, he has always declared himself favorable to protection for the dye industry but against considering

the subject separately. It was he who offered the resolution which came to the rescue of the industry when the original Knox peace resolution created a similar danger to its existence a year ago last winter, and now that he has had his way about taking up the Dye bill along with the general tariff measure, he will no doubt prove one of its staunchest supporters, as his votes on the above questions already indicate.

Senator McCumber voted for the adoption of the Knox amendment when it was being considered separately, and voted against Senator King's attempt to nullify it, but Senator Smoot, on the contrary, voted against its inclusion and for the King amendment. This would make it appear as though he would not help the measure much if it were again to be attacked.

His withdrawal from the side of the industry, however, is balanced by the corresponding reversal of Senator Simmons who, while voting against

the Fordney bill as a whole, nevertheless voted for the adoption of the Knox amendment and against Mr. King's motion—and in addition left no doubt as to his sentiments with regard to the protection of the industry by his subsequent remarks from the floor.

Senator Williams, the final member of the committee, was absent when the Knox amendment was agreed to, but was paired with Senator Penrose. Both being absent, it was explained by Senator Harrison that if he had been present he would have voted "nay." And by the same token, he would likewise have been one of those to vote for Mr. King's attempt to kill off the measure. On the Fordney bill itself he voted "nay."

Unless something unexpected happens to bring about a change, therefore, the industry will find itself with three out of the five Senators upholding its interests and the interests of the country when the conference with the House representatives is held.

FOREIGN TRADE OPPORTUNITIES

Names and addresses of any of the firms mentioned below may be obtained by direct application to the U. S. Bureau of Foreign and Domestic Commerce, which compiled the list, or any of its district and co-operative offices. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers. Applications for particulars should refer to opportunity numbers; and in case information is desired regarding more than one, inquiries should be made on separate sheets.

34732—An importing firm in India desires to purchase white goods, such as mulls, nainsooks, shirtings and drills, and *colored prints and fancies*. Quotations should be given c. i. f. Indian port. References.

—o—

34782—A merchant in The Netherlands desires to secure an agency for the sale of *textiles, hosiery, underwear, pajamas, shirts, collars, suspenders, hats, shoes, gloves, etc.* Quotations should be given c. i. f. Rotterdam. References.

—o—

34753—A commercial agent from Mexico who is in the United States is planning to return to his native country and wishes to secure an agency for the sale of leather, shoe findings, shoes, hardware, paper, stationery, *chemicals, dry goods, hosiery, and drugs*. Reference.

—o—

34725—A mercantile firm in Belgium desires to secure representation for the sale of *cotton and woolen goods, raw cotton, minerals, machinery, iron mongery, chemical products, grain, sugar, rice, foodstuffs, automobiles, papers, and oils and greases*. No reference offered.

—o—

34812—A merchant in Syria desires to purchase hardware, wood and iron working tools and machinery, hand and motor pumps, agricultural machinery, construction material, bar and

rod iron, tin plate, *cotton and woolen goods, etc.* Quotations should be given c. i. f. Beirut, Alexandretta and Tripoli. References.

—o—

34806—An importer in Mexico desires to be placed in communication with exporters or manufacturers of *wool textiles, cotton textiles, silk stockings, artificial silk stockings, imitation pearls, umbrellas and parasols, sawed lumber, particularly hickory, poplar, hazel (avellana) and oak; bichromate of potash, quebracho extract, 65 per cent minimum; and mosaic tiles*. Payment to be in cash.

—o—

34757—A mercantile firm in India desires to secure exclusive agencies for the sale in India, Burma and Ceylon of *heavy chemicals and chemical preparations, drugs, patent medicines, hardware, metals, paper and paper products, hosiery, cement, foodstuffs, sugar, cotton twist and yarn, cotton and woolen piece goods, canvas, matches, tobacco, cigarettes, stationery and office supplies, household furnishings, etc.* No reference offered.

—o—

34728—A mercantile firm in India desires to receive illustrated catalogues and estimates for an ice plant of 20 tons' daily output; *spinning machines; steel and iron products; round, flat and square bars; angles and rolled beams; water pipes, tubes and bends; brass and copper products; door fittings; building materials; umbrella materials; automobiles and motorcycles and accessories; electric-light apparatus and novelties; and colors and dyestuffs*. References.

—o—

34770—A manufacturer in India desires to purchase and secure an agency for the sale of a *cotton baling press* capable of pressing 400 pounds of cotton into a bale of a density of 20 to 27 cubic feet per ton, and complete machinery for an oil press capable of extracting oils from small seeds, such as mustard seed and rape seed; glass bottles, thermometers, patent and chemical drugs, and *machinery for prepar-*

ing absorbent wool. Quotations should be given c. i. f. Bombay or Karachi. References.

ALLIED CHEMICAL & DYE HAD \$16,179,939 NET 1920 INCOME

The first annual report of the Allied Chemical & Dye Corporation for the year ended December 31 last shows net income after charges, inventory adjustments and Federal taxes of \$16,179,939, equivalent, after allowing for 7 per cent preferred dividend requirements, to \$6.33 a share earned on the outstanding 2,143,455 shares of common stock of no par value.

The consolidated income account of the Allied Chemical & Dye Corporation and subsidiaries for year 1920 follows: Gross income after depreciation, renewals, obsolescence, ordinary taxes, etc., \$29,768,751; inventory adjustments, \$10,226,688; loss on sale of securities, \$798,435; Federal taxes, \$2,563,689; net income, \$16,179,939.

The report, which was awaited with lively interest in chemical trade circles indicates that the corporation is in a strong financial position.

William H. Nichols, chairman of the board, in his remarks to shareholders, said:

"Inventories at the end of the year have been reduced to the basis of cost or market value, whichever was lower, the reduction being charged to the year's operations; and adequate provision has likewise been made for depreciation and obsolescence of plant during the year. The valuation of assets on the subsidiary companies' books have not in any case been increased in the consolidated statement.

"Owing to the fundamental character of the company's business, it was, of course, inevitable that operations should be curtailed during the recent and current period of general industrial depression. It is confidently expected, however, that the company will likewise share fully and promptly in the prospective general recovery.

"The substantial unanimity of action by stockholders of all the consolidating companies in joining the consolidation plan, speaks for itself; and the investigations so far made by the consolidated management confirm the belief that there exist varied opportunities of much promise to be developed through united effort."

The consolidated general balance sheet, as of December 31 last, shows as follows:

Assets: Real estate, plant, equipment, mines, etc., \$141,370,952; investments, \$19,985,860; cash, \$19,942,819; marketable securities, \$2,699,531; notes receivable, \$1,125,455; accounts receivable, \$23,267,306; inventories, \$45,602,875; deferred charges, \$1,366,503; sinking fund, etc., \$1,131,362; contingent assets, \$1,967,040; patents, processes, trade-marks, good-will, etc., \$21,283,444; total, \$282,743,048.

Liabilities: Preferred stock, \$37,326,400; common stock, 2,143,455 shares without par value, declared at \$5 per share, \$10,717,275; funded

debt, \$5,420,000; purchase money obligations, \$620,547; notes payable, \$11,100,000; accounts payable, \$10,027,410; accrued wages, \$449,432; other obligations, \$1,161,974; reserve for depreciation, etc., \$54,513,403; general contingency reserves, \$9,527,536; tax reserves, \$2,885,578; insurance reserves, \$2,005,020; other reserves, \$4,113,485; bond issue guaranteed, \$1,967,040; undeposited stock of five consolidated companies, \$4,312,413; minority interests of subsidiaries, \$326,528; surplus, \$126,396,006; total, \$282,743,048.

KUTROFF, PICKHARDT MOVES BOSTON OFFICE

Announcement to the trade has been made by Kutroff, Pickhardt & Co., Inc., dyestuffs, colors and chemicals, to the effect that the Boston office of this firm has been moved to the new quarters at 157 Federal Street, near the corner of High Street, that city. It is further stated that the post-office box number, 5267, Boston, Mass., and the telephone numbers, Fort Hill 1577 and 1578, all remain unchanged.

CHANGEABLE EFFECTS IN SILK HOSIERY AT KNIT- TING ARTS SHOW

One of the most interesting features shown at the Knitting Arts Exhibition in Philadelphia was a display of piece-dyed silk hosiery in a wide variety of changeable effects, particularly in delicate hued combinations, shown by the Neversink Dyeing Company, of Reading, Pa.

These hose had every appearance of being yarn-dyed; the toes, heels and top bands showed different solid colors while the body of the stocking showed a changeable mixture of the two hues. It was explained, however, that the stockings were in reality composed of two fibers—pure silk and artificial silk—the one being plated over the other and then dyed in two baths, one of which affected only the silk fiber while the other affected only the artificial silk. The result was an

extremely pleasing changeable appearance which was increased in effectiveness when the stocking was stretched over a form.

SIAM'S TRADE IN DYESTUFFS

Siam's requirements in dyes has been comparatively small in volume, according to Vice-Consul Hansen. While the values show some advance in the post-war years, the quantities imported were less than those for the pre-war period, amounting to 77,442 kilos (1 kilo equals 2.2046 pounds), valued at 236,559 ticals (\$87,527), in 1919-20, against 255,416 kilos, valued at 191,719 ticals (\$70,936), in 1914. The slackness in the dye trade is due to the act that textiles are not manufactured locally. The United States did not share directly in Siam's import of dyestuffs until 1918-19 and 1919-20, the imports prior to these years being mainly supplied from the European Continent and through transshipment in Oriental ports. During these years Siam imported from the United States 2,432 kilos of dyes.

PRICES OF COAL-TAR PROD- UCTS IN GERMANY

The condition of the market is such, says "Handelsberichten" (The Hague, Netherlands), that coal tar and coal-tar products can be obtained at low prices, but the Dutch purchaser will do well to seek accurate information concerning prices, making his inquiries directly at the coke works and the distilleries connected with the mines; for the market is in a state of confusion. The buyers are trying to bring the prices down, while the producers are endeavoring to raise them, and the trade, which is largely in the hands of "wild" dealers, is thus often given the opportunity of taking advantage of the fears of the sellers and obtaining stock at low prices. The confusion is due to various factors. Coal is sold at a fixed price, because the Government will not permit a change; ammonia and benzol, also controlled by selling organizations, are quoted regularly, but the selling

prices are sometimes disregarded. In the free market coal tar is quoted at 183 to 200 marks for 100 kilos (approximately \$1.35 to \$1.50 per 100 pounds). However, the coke works are selling tar products far below that price both for domestic consumption and export.

The production of coal is gradually approaching the pre-war level; hence the coke works are producing more and more crude tar. The consumption of briquet pitch is decreasing, as the briquet factories, hampered by transportation difficulties, cannot work to their full capacity; their production is now about one-third below normal. The deliveries under the Peace Treaty are yet to begin, and thus there is a large supply of pitch available which might take advantage of the lower ocean freights, but for the present the producers have no other choice except to produce for stock or seek some new outlets.

The demand for tar oils has decreased largely, although the prices had been reduced 25 to 30 per cent about the middle of 1920. The demand for wood preservatives is improving both at home and abroad, but that does not help much. The dye factories have now reached two-thirds of their pre-war consumption of materials, and so there is a sure and steady market for pure naphthalene; the minor products are bought and sold by the "wild" dealers. The trading in anthracene and anthracene residues is at a standstill.

The present prices, expressed in marks per 100 kilos, are about as follows: Briquet pitch, 200; tar oils, according to quality, whether mixed or pure, 230-280; crude naphthalene,

200-220; pure naphthalene, according to quality and preparation for use, 600-700; anthracene, 40 per cent pure, 700-800; anthracene residues, 180; benzol and homologous products, 500-560 marks per 100 kilos. Benzol alone finds a ready sale. Of the output, which has already reached pre-war figures, 20-25 per cent will now have to be delivered to France. The price is lower than the world market price of gasoline. [In February, 1921, the mark was quoted in New York at rates varying from 1.58 to 1.75 cents, the quotations averaging 1.637 cents. At that rate 100 marks per 100 kilos is equivalent to 74.25 cents per 100 pounds.]

BEARING OF A SYNTHETIC DYE INDUSTRY UPON OUR NATIONAL WELFARE

(Continued from last week.)

CRESYLIC ACID (CRESOL)

Cresol, or cresylic acid, is another case of triplets, much like the xylenes, with the same first names, and bearing a relationship to carbolic acid similar to that of the xylenes to toluene.

These cresols are present in the creosote or dead oil from coal tar, the main use of which is for the preservation of wood (telegraph poles, fence posts, railroad ties, paving blocks, etc.), although some is employed also in the preparation of sheep dips, of lysol and of other emulsifiable disinfectants.

It is not an easy task to separate the three cresols from the crude material and obtain them pure, but when they are so isolated they are found to have much the same properties as carbolic acid and to be serviceable for similar

purposes. Their non-availability is reflected in their limited use for synthetic purposes.

Carbolic and cresylic make up the bulk of what are termed the tar acids. The chief source is gas tar, for the tar from coke ovens contains but small amounts.

CARBAZOLE

This crude differs radically from the foregoing in that it is composed of carbon, hydrogen and nitrogen.

It occurs in coal tar associated with anthracene and is separated with it. An increased demand for carbazole would thus encourage manufacturers to refine their anthracene. In 1919, but one firm reported the commercial production of carbazole, although it is the raw material for a very valuable dye called Hydron Blue.

In what perhaps has seemed to you a rather long drawn out cataloguing of coal tar products, I would remind you that we have considered but five crudes in any detail, and even in these enumerated but a few of many thousands of compounds to which they give rise, while over 150 other separate and distinct chemical individuals have been isolated from coal tar, each of which is the starting point of other long series of descendants; and coal tar is not the only source from which the dye industry derives its initial materials. The Coal Tar grove is, therefore, both flourishing and extensive. The synthetic dye industry is primarily and chiefly responsible for its wonderful development and rich fruitage, and without the fostering care of that industry it will speedily languish and decay.

INFLUENCE UPON ADVANCEMENT OF CHEMISTRY

The influence of the synthetic dye industry upon the advancement of the science of chemistry has been deep and far-reaching. For the solution of many of the problems arising in the plant, experts in all branches of chemistry must be enlisted, and the results of this con-

centrated and intensive investigation have led not only to the solution of the particular problem immediately in hand, but of many collateral problems as well, inorganic as well as organic, and not infrequently to the uncovering of new laws of fundamental significance to the entire science.

Great industrial research laboratories have been established and organized by the manufacturers, manned by able investigators and, in Germany for example, the university laboratories have often been called into active co-operation, thus adding the knowledge and experience of the university professor to that of the technical staffs of the plants on the one hand and, on the other, vitalizing the university teaching by bringing the teacher into actual personal contact with the applications of his lectures and keeping his information more nearly up to date. It is a pleasure to record that this co-operation has also taken the form of endowments in several instances for our educational institutions, and giving to deserving students an opportunity otherwise unattainable of gaining advanced training and thus becoming more useful citizens.

For the highly trained synthetic organic chemist, the dye industry with its collateral and related industries makes the greatest demand. As the manufacture of explosives and of chemical warfare munitions is likewise mainly dependent upon men with similar education and experience, and much of the equipment and many of the operations are alike in all three lines of activity, it will be readily understood why a modern synthetic dye plant is referred to as "a potential arsenal." Germany's great dye plants were converted almost overnight into real arsenals for the manufacture of munitions.

Badly handicapped as we were in the matter of dye plants when we entered the war, our most serious deficiency was the lack of a sufficient number of skilled organic chemists to man new plants when these were ready. Under the stress of war con-

ditions, a factory may be erected and equipped in six months, but it takes six years' education after high school to fit a man to begin learning the practical operations involved in large-scale production, and many months of such experience before he can really handle his job efficiently. It may be that a million men "will spring to arms overnight," but the crop of chemists grows more slowly.

(To be concluded.)

The Universal Chemical Company, Richmond, Va., has been incorporated with a capital of \$100,000 to manufacture chemicals, dyestuffs, etc. H. L. Jones, Norfolk, Va., is president, and L. McD. Woolford, of Richmond, is secretary.

With a capital of \$7,750,000 the Arex Products Corporation has been incorporated under the laws of Delaware to deal in chemicals. Headquarters of the new enterprises will be located in Dover, and the incorporators consist of Arthur W. Britton, Samuel B. Howard and Robert K. Thistle.

The Department of Trade and Customs of Australia has made a rule that any shipment of dyes to Australia of foreign origin must be accompanied by the British customs specifications No. 30, and that prior to shipment a certificate must be obtained from the British Dye Commissioner, giving permission for the export to Australia. When this certificate has been obtained, and the dyes are to be shipped from the United States, the shipper should deposit this certificate at the office of the Commissioner for the Commonwealth in New York City, so that a cablegram may be sent to the Australian Department of Trade and Customs, at Melbourne, for the shipment to enter Australia.

The Peerless Color Company, Inc., Bound Brook, N. J., manufacturers of direct fast cotton colors, announce the appointment of L. B. Fortner Company, 235 Dock Street, Philadelphia,

as exclusive agents for Pennsylvania, Delaware, Maryland, southern New Jersey, Virginia and West Virginia districts. The Fortner Company will carry stock in Philadelphia. The Peerless Color Company, Inc., began operations in 1916, and was one of the pioneer manufacturers of Primuline in the United States. In addition it produces such colors as Direct Fast Yellows SB and FF (chloramine yellows), Direct Brilliant Flavines, etc. The company has paid particular attention to the faster types of dyes, and has also maintained complete research and service departments in order to be in a position to supply its customers with accurate information regarding its products. Its New England sales agents are Dunker & Perkins Company, 287 Atlantic Avenue, Boston.

Dye-a-Grams

A Du Pont chemist, 'tis said, tested a certain dyestuff, and turned in the following report: "Excellent for fast ladies' dress goods."!

—o—

One sure thing: Germany is neither busted nor trusted!

—o—

The demand is strong for summer shades of delicate colors and little depth—which, of course, accounts for the unprecedented demand for salt.

—o—

To the man who is out of work, no doubt a "job" would seem like a vocation.

The man who cannot borrow a dollar is hardly interested in the information that there are 26,000 millionaires in the U. S.

—o—

Most of the theories designed to save the world, we notice, are based on the assumption that this old globe would be O. K. if the little fellows could boss the big fellows!

—o—

If a man cannot reason for himself, he should keep still and not let German propagandists reason for him!

—o—

If you want to be accused of:

Being patriotic, being a 100 per cent American, being a man, being a public-spirited citizen,

—then don't buy Reparation dyes!

—o—

Some dye firms have artistic labels for their dye containers. But the identity of the contents is very often not legible—and smearing dye on the label doesn't help any!

—o—

BEARING OF SYNTHETIC DYE INDUSTRY UPON OUR NATIONAL WELFARE — *Reporter headline*. Yes, and a lot of people we know would like that bearing to be a roller bearing!

—o—

It isn't always the person who is color-blind who picks out "freak shades"—which proves that a good many of us are freaks, one way or another, and don't know it!

A woman recently stated that "men to-day know more about women than their fathers did." Well, if they don't they must be blind!

—o—

We never saw

The Isle of Yap,

But hardly think

It worth a scrap.

G. E. T.

NOTES OF THE TRADE

According to a cable to the "Journal of Commerce," the Hoechst dye works of Ludwigshafen and Leverkusen have declared dividends of 20 per cent, and propose raising their capital from 252 to 450 million marks each.

The H. E. R. Corp., New York, has been incorporated with a capital of \$100,000 to manufacture dyes, colors, etc. The incorporators are: H. H. Hempel, A. Phillips and G. J. Gudici, 61 Park Row.

The Euco Chemical Company, Tonawanda, N. Y., has been incorporated with a capital of \$25,000 to manufacture chemicals, dyes, etc. The incorporators are: C. L. Corliss, C. L. Park and W. W. Britt, Tonawanda.

The Apex Chemical Company, 61 Park Row, New York, has filed notice of increase in capital from \$10,000 to \$60,000.

Williams Haynes, publisher of our neighbor, "Drug & Chemical Markets," recently addressed the Advertising Club of Indianapolis, the Chambers of Commerce of Cincinnati and Columbus, and the Exchange Club of Columbus, on the military and economic importance of the dye industry, and so effective was Mr. Haynes' presentation of the case that strong resolutions in favor of adequate protection were passed by the first two organizations and forwarded to the Senate Finance Committee and the House Ways and Means Committee.



AMERICAN DYESTUFF REPORTER

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AMERICAN DYESTUFF REPORTER

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MR. DOANE TALKS OF DYES

Being an Answer to a Recent Article by the Editor of "The Manufacturer" in the New York "Daily News Record"

WHEN the printing press became a reality the professional copyists were certain that their only means of livelihood had been taken away, and they sought to rouse the countryside into concerted action looking to the elimination of the fiendish contrivance. When the cotton gin was invented, those who did not understand the place it was destined to occupy in the economic scheme of things made several not altogether unsuccessful attempts to smash it. . . . And in future days our grandchildren, on looking into their school histories, may encounter some such paragraph as the following:

"It was the outbreak of the World War which marked the real birth in the United States of the coal-tar chemical industries as we know them to-day, and at that time the most serious obstacle which they had to overcome in order to gain a footing was the cry of 'Monopoly' which was raised in certain quarters; since many ignorant persons, lacking a sufficiently advanced education to enable them

to comprehend the true nature of this innovation in American industrial life, mistakenly concluded from the uniquely complex organization necessary to insure markets for the numberless by-products of these industries, that the purpose of its promulgators was none other than the creation of a vast trust which was, in time, to control the country. Thus, while the purely technical problems confronting the industry were alone sufficient to tax the ingenuity of the leading chemists of the day, these pale to comparative insignificance beside the vexations occasioned by the narrow suspicions and vicious intolerance of the unlearned, which, fortunately for the country, could not prevail against an enlightened majority."

Belike the future historian will offer his readers a choicer grade of hand-picked English than that in which the foregoing is presented, but the thought expressed will be very much the same. And as to sources and authority for his inspiration, the coming writer will be sure of at least one such if the files of the "Daily News

Record" are preserved for the edification of posterity—particularly the issue (appropriately enough) of Friday, May 13, in which Warren F. Doane, editor of "The Manufacturer," published by The Manufacturers' Club of Philadelphia, tells the world—in one of the most startlingly illogical articles since the weird conceptions of Charles B. Carter and Irving A. Keene caused the Cartel to fire three or four members of its force of propagandists, claiming that it could get the same work done for nothing—that the entire textile industry of this country is doomed if Mr. Longworth's efforts to protect the dye industry are successful!

Nothing less than that will take place, is Mr. Doane's dire prediction, if the American dye manufacturers are allowed to pursue their hideous designs. He can't see where the textile people have one, solitary chance for survival. They will perish, and so, presumably, will the rest of the country, since before our soldiers can shoot the festive shells filled with TNT and poison gas prepared by our dye chemists, they must be properly clad. No Garden of Eden fashions for our army, even though the war take place in summer! But perhaps we'd better begin at the beginning.

"Dye License Called Tool of Monopoly," the Doane article is headed. The writer starts off very promisingly indeed by seeking to discredit the plea for protection made by Senator Knox, who asked it on the ground that the dye industry is a military necessity—and all other testimony of a like nature, which he characterizes as "the aniline brand of Americanism." It was in just this fashion that many laughed at the idea of a German or any other kind of a foreign menace in the years before the war; it was in just this fashion that many attempted to squelch the advocates of preparedness, and beyond stating that Mr. Doane is attempting to contradict the evidence of many men far abler and more important than himself, there is no reason for further comment on this phase of his argument.

Later, however, he says: ". . . the domestic dye manufacturers want a complete and unrestricted monopoly of that industry, free of all foreign competition that might in any way regulate or restrict domestic price, at the expense of other industries and the entire consuming public of the United States."

When one encounters a statement like that, one realizes that it is no time for nicely worded and subtle thrusts, nor for polite contradictions. That statement, as it stands, is an utter falsehood, born of a dense ignorance as to the provisions of the proposed Longworth measure perhaps, but a falsehood nevertheless and productive of just as much evil as though it were the result of the most debased motives. We would respectfully suggest that Mr. Doane read over the bill once or twice in order to avoid perpetrating a similar *faux pas* in future writings.

He agrees, in another part of his article, that we must maintain our chemical industry which the war gave us. Yes, they all do that; it is one of the favorite devices for making the listener think the opposer of adequate protection really understands the question. "But," the writer continues blithely, "it is here; we have it. It is not a desire but an actuality; not a dream, but a fact."

Then why, if the dye industry is already a fact, does Mr. Doane go to so much trouble in another portion of his article to prove that it is responsible for a number of products so inferior in grade that it is necessary to use German dyes instead? These two statements cannot stand together. One or the other must be wrong, and he deliberately ignores the real fact that the Longworth measure is expressly designed to let American consumers have whatever German colors they cannot obtain here until such time as Americans can produce them. He also ignores the fact that what we do possess in the way of a dye industry we owe solely to artificially prolonged war conditions, and to no other cause. War conditions gave our infant industry birth, and war conditions of protection have acted as

wet-nurse. The weaning time has not yet arrived.

We have the American dye industry of to-day, pursues the writer, "equaling if not eclipsing in financial power many of the longer established industries, and rapidly paralleling all others in manufacturing efficiency and consequent industrial prestige."

Let him name some of the American industries, of like importance, which it equals in financial power. Likewise let him name one American industry which it equals in comparative efficiency. The real answer lies in the fact that in the case of the dye industry the 100 per cent efficiency mark calls for a more complex organization than any other industry in the world to-day. It is not yet organized sufficiently to stand alone, and we challenge Mr. Doane to prove that it is, or that it compares even favorably with the German industry with which it will one day be called upon to compete. The question is not whether the dye industry is the inferior, the equal or the superior of any other American industry, anyway; it is whether it is yet the equal or the superior of the dye industries of other nations.

In describing the present means of protection, the writer makes use of the phrase: "domestic consumers only can import by the special permit of the War Trade Board, after satisfactory proof is submitted that the needed dyes cannot be secured in this country." The reader will note that he carefully omits to add "on reasonable terms as to *price*.

quality and delivery"—which would, of course, knock the bottom out of his argument that Americans seek to foist inferior goods upon consumers at ruinously high prices.

And while we are on that phase of the discussion, we wonder if he has taken note of the "encouragement" offered by some consumers for the production of a better grade of dyes. It is possible that he is not aware that in more than one instance the dye manufacturer has made a special effort to produce a superior color, and has succeeded only to have it refused by the consumer, an inferior dye deliberately substituted—and the results blamed on American dyes!

Then again, Mr. Doane declares that "hypocrisy and deceit" enter when "this already overgrown young man"—the American dye industry—"attempts to describe himself as a swaddling infant." And why shouldn't it thus describe itself, since the description is a wholly accurate one? Mr. Doane shows himself a very poor judge of what constitutes a well developed dye industry if that is how he regards our own. Just as is the case with living creatures, what constitutes development in one species of industry does not apply to another; there is no universal measure for the determination of maturity. The three-year-old horse would laugh at the idea of calling a three-year-old human an infant. The proprietor of a news-stand can build up a fully developed "industry" in a day, and if he fails he can borrow \$1.65 or thereabouts and begin

life over again on the next block. There is no getting around the fact that the dye industry in this country is still very much of an infant—not in its capacity for mere quantity production, but in its more important and vital capacity for *variety of production* and in its ability to sustain itself in the same field with a truly mature industry such as Germany possesses.

The writer further hints that if the industry cannot yet do this, it deserves to fail. Leaving aside the question of whether or not it is yet reasonable to expect it to compete with the product of forty-five years' intensive cultivation in Germany, does the country at large deserve to have the industry fail? It must be remembered that the citizens of the United States have considerably more interest in the industry than the question of colors for clothing and decoration. That is the least of our concerns; the really pressing question is our ability to keep pace with England—which possesses legislation identical with that proposed by the Longworth measure—Japan, Germany, France and other nations in scientific advancement and in military preparedness.

As to the testimony of Joseph S. Rambo, president of Rambo & Regar, Inc., quoted by Mr. Doane to show how American dye prices exceed pre-war German dye prices—this is the final answer to the question as to the infantile state of the industry, as well as to its present ability to compete. Let Messrs. Rambo and Doane consult the U. S. Tariff Commission's "Census of Dyes and Coal-Tar Products, 1920," and they will find that American dye prices are lower all along the line than they were a year ago, and were lower a year ago than they were two years ago. That is the important point. Then, likewise, let them take into consideration the following newer aspects of the situation, namely: (1) The comparative cost of labor in Germany and in America; (2) the difference in exchange rates, which alone would re-

quire a duty of 1,600 per cent to overcome, and (3) the incomparably better organized German Cartel, highly subsidized and well able to sell at a loss until the American industry, if unprotected, is driven from the field. After this has been accomplished by the Cartel, do these two gentlemen imagine that American dye consumers will get pre-war prices from the Germans? If so, they might get some very valuable information on this point from the consumers themselves, who have already had plenty of experience with the methods of the German combine in lowering prices to smash an upstart American competitor (in the days before the war), only to raise prices when the market is won.

Let them ask dye consumers whether they prefer to be at the mercy of a German trust rather than a group of American concerns which can easily be kept under control, if necessary, by invoking the Sherman law. Before the war there were seven huge dye-making firms and six smaller ones in Germany which supplied nearly the entire world demand, and there were seven dye-making firms in the United States which took care of a small portion of the domestic demand by assembling *intermediates sold them by the German combine*. To-day the German firms are practically one, encouraged by the German Government and heavily subsidized for the avowed purpose of recapturing world markets, while in this country there are upwards of 180 dye-making firms of various sizes, all in active competition with one another. Which group does Mr. Doane think would be kinder to American dye consumers—the Cartel after American competition has been eliminated from the field, or the American concerns working under the perpetual threat of German competition? And which does Mr. Doane think would be the easier proposition for the American Government to control—the German or the American?

The writer's whole argument apparently rests on the contention that

the Longworth measure would create a monopoly of dye manufacturers in this country. What becomes of the "monopoly" cry in the face of the fact that under this very form of protection, maintained since the war began, we have seen seven companies increase to 184? Let him cast his eyes Rhinewards if he would become acquainted with a REAL monopoly, government-fostered and already boasting that it will triumphantly regain control of American dye markets.

"The domestic dye industry," declares Mr. Doane, "cannot deny that adequate tariff duties under which this country has had its great and successful industrial growth, would amply protect it in every phase of needful protection." Here he treads on extremely dangerous ground, and we can only repeat our challenge, issued to others who have made this assertion, for him to submit such a tariff. Let him sit down now and devise a schedule which will be fair to American consumers and yet enable the American dye industry to reach a point wherein it can successfully compete with Germany in the sale of dyes. If he can do this he will have succeeded in a task which has utterly baffled every tariff expert who has essayed it.

"I know, too, that the passage of the Longworth bill to continue for another five years the present embargo in behalf of the domestic dye industry would threaten with stagnation and destruction the entire textile industry of the United States."

There stands one of the most amazing statements about the dye situa-

tion which has ever been published. Not even the most rabid detractors of the Longworth measure have ever ventured upon such an assertion, derived from Heaven knows what process of reasoning. Yet if Mr. Doane insists that this is to be the effect of the Longworth bill, then will he favor the public by going a step farther and describing his notion of what the Cartel would do to the textile industries? Between the two threats, it would appear as though they might as well give up right here and now, thereby avoiding a hard, profitless struggle.

At every turn Mr. Doane shows himself to be woefully ignorant of the contents of the Longworth bill, which is expressly designed to serve first the interests of the American dye consumer, to facilitate his importation of whatever foreign dyes he needs, and at the same time to provide for the substitution of American colors only as they become satisfactory to the consumer in the threefold respect of price, quality and delivery.

The application for higher wages affecting 100,000 dyers in Yorkshire, Lancashire, Cheshire and Derbyshire has resulted in the decision by J. A. Compston, K.C., that because of the protection the sliding scale affords the workmen on the increased cost of living they have not made out a case for an advance on current rates. They had claimed an advance of 40 per cent. Pieceworkers are awarded 25 per cent higher earnings than day workers.

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 of the American Dyestuff Industry. Unbiased
 contributions appreciated.

A. P. HOWES, President
 LAURANCE T. CLARK, Editor

THE "THREE MONTHS" MYSTERY

The events of the past week have demonstrated clearly that if Congress is indeed mighty slow in getting at a given proposition, it can act rather quickly once it begins. As a result of the conference of representatives of the House and Senate over the Emergency Tariff bill, passed with the Knox dye amendment by the Senate during the preceding week, the time of protection to the dye industry has been cut from six to three months. The expiration of that period will see the passing of the newly acquired authority of the Treasury Department to continue the licensing system for the preservation of the life of the industry, which, unless something is done to prevent meanwhile, will become exposed to the full fury of the German attack.

At the same time, Representative Longworth introduced in the House a resolution making the provisions of the Permanent Tariff bill, now in course of preparation in the House Ways and Means Committee and containing the Longworth selective embargo plan, effective from the day it is reported out on the floor of the House. Since it will almost certainly be placed in debate before three months have elapsed, the passage of this resolution would extend the time of protection automatically up to the time the Congress reaches a final decision and the bill is enacted.

This is no more than the industry has a right to expect. Whatever our legislators do, they have no manner of right to expose the industry to unre-

strained competition until they have determined that such a step is advisable, and hence the folly of cutting down the time of protection so that it would fail to bridge the gap between the end of licensing and action by Congress, is most incomprehensible.

When the Knox three months are up, the following possibilities present themselves: The time could be extended by the joint action of Congress, a special resolution providing for another three months' activities of the Treasury Department could be passed, the General Tariff bill with the Longworth provisions may have been enacted, or the Longworth interim tariff resolution may have been passed. Any one of these possibilities would save the situation for the dye industry, which otherwise will be forced to depend upon the wholly inadequate tariff of September 8, 1916, until Congress can act on the selective embargo measure.

It is regarded as highly improbable that the first two "life-savers" could or would be invoked, while the average time for Congressional tariff legislation is nine months—and even then there is no guarantee that the final measure will contain the selective embargo intact, although its chances should be good. At the present writing it is impossible to predict what will happen to the Longworth interim resolution, but by the time this publication is in the hands of its readers the fate of the measure will likely be known, since it is predicted that it will be acted upon by either Saturday or Monday.

This resolution would make all rates of duty and other protection features operative just as they stand in the bill as it comes from committee. All during the time of debate, lasting probably many months unless unheard-of records are set, these duties will be in full force. Then, if any are lowered or changed, that change becomes retroactive from the time the bill was reported out and provision is made for refunds where necessary. While many declare that such a proceeding is too novel and unusual to find favor in the eyes of Congress and the country at large, many predict that it will be passed.

Due to lack of further information as to actual results, comment is impossible at this time; nevertheless there is one thought which should not be allowed to become dormant, no matter what may have taken place by the time this is in print.

And that is: Now or never is the time for you to fight, through the mails, for your rights as dye manufacturers, for your rights as dye consumers, and for your rights as American citizens. And should the Longworth resolution fail and the Emergency Tariff with its three months' protection be enacted, you may look forward to the most strenuous campaign of any which has yet taken place in behalf of the dye industry—a campaign in which you must play the leading role. It is high time that the citizens of this country took matters into their own hands instead of leaving them to whatever whim may happen to possess Congress at the time their rights are in jeopardy.

PUBLIC OPINION, THE D. A. R. —AND SENATOR KING

By way of adding a further—and, it is hoped, final—word on Senator King's ill advised denunciation of the D. A. R. for its endorsement of a resolution favoring an embargo on imported dyes, The REPORTER takes pleasure in reprinting two items from the press referring to this subject which are eloquent of the attitude of most of us. The first is a letter to the New York "Tribune," which printed the story of the Utah Senator's *faux pas*, while the second appeared as an editorial in the Saginaw (Mich.) "News-Courier."

To the Editor of The Tribune.

Sir: Your issue of April 28 contains a telegram from your Washington bureau referring to a complaint made by Senator King, of Utah, that the Daughters of the American Revolution are being used to spread propaganda in behalf of what he was

pleased to call "the dyestuff monopoly."

Senator King appears to be unduly sensitive on this subject and, in fact, to be almost "jumpy" about it. The Daughters of the American Revolution are a patriotic body composed of women who feel themselves at liberty to express their opinion about anything which they feel to be or not to be for the benefit of their country. In the exercise of this right they express themselves as being in favor of adequate and proper protection for the dyestuff industry.

They have just as much right to do this as any other body has to pass a resolution to the contrary. If all organizations and associations passing resolutions in support of or opposing certain legislation are to be charged with spreading propaganda we shall soon reach a position where the average man or woman will be afraid to exercise the privilege of free speech guaranteed by the Constitution.

Senator King's reference to the dyestuff industry as a monopoly is out of date. The charge has been thoroughly refuted.

M. J. C. GREENE.

New York, May 2, 1921.

The editorial in the Michigan paper, which was headed "Protection for American Dyes," was as follows:

An interesting development in the movement for protection of the American dye industry against the subsidized German trade occurred at Washington, Saturday, April 23, at

Situation Wanted

CHEMIST AND DYER—Fifteen years' practical experience as color chemist, dyer and demonstrator; also manufacturer of dyestuffs and intermediates. Thoroughly understands application of all classes of dyestuffs to all materials. Graduate chemist with mill experience. Address Box 49, AMERICAN DYESTUFF REPORTER, 4109 Woolworth Building, New York City.

the thirtieth annual congress of the D. A. R. In the morning, Miss Janet Richards introduced a resolution indorsing the movement for an embargo against the importation of German dyes; the resolutions committee took charge, later reported favorably, and before the day's sessions were ended the resolution was unanimously adopted by the gathering.

It is recited in the resolution that renewed importation of German dyes will not only impede the recently discovered American industry, but "will greatly interfere with domestic chemical research under the United States Chemical Warfare Service." These women of the D. A. R. have not forgotten the dilemma in which the country found itself in war time, respecting this matter of dyestuffs in which Germany had been allowed to create a monopoly; and not merely an industrial or commercial monopoly, but which assured also a dominant position in the production of explosives used in warfare.

There was not lacking spirited attack of the problem, and American chemists, backed by American capital, were speedily producing not only dyes, but the by-products so essential to the production of necessary war material. By the time the war ended, the American dye makers were in fair position to assure permanence to the restored industry; but they have since been subjected to much the same tactics as Germany pursued before the war; and it is to block those tactics effectively that the resolution passed by the D. A. R. is aimed.

This is a matter of importance, and if there is any value at all in protection or embargo, here is exactly the kind of situation in which to prove it; and almost any measure that shall prove restrictive of the German effort to resume monopoly and control is justified. Not only from regard for the American dye makers, though they are entitled to much consideration in view of what they did when emergency called, but with special re-

gard to the researches of the service to which the D. A. R. resolution calls specific attention.

"SPEAKING OF MONOPOLIES, TRUSTS AND THE LIKE—"

Unanimous approval has been voted by the stockholders of Bayer & Co., of Leverkusen, Germany, for the proposal of the directors extending to December 31, 1999, the agreement of communal interest made up to December 31, 1965, between the following works making dyes with a tar basis: Badische Anilin und Soda Fabrik of Ludwigshafen; A. G. für Anilinfabrikation of Berlin; Farbwerke vorm. Meister Lucius & Bruning of Höchst; Farbwerke Leopold Cassella & Co. of Frankfurt-a-M.; Kalle A. G. of Biebrich; Chemische Fabriken vorm. Weiler-ter-Meer of Uerdingen and Chemische Fabrik Griesheim-Elektrom of Frankfurt-a-M.

With a view to assuring the stability of the combine, the agreement has been amended by the addition of the following provision:

To give notice to terminate the agreement for the community of interests it shall be necessary to obtain the consent of the general meeting. This consent must be voted by a majority of four-fifths of the capital represented for this vote, the same majority being necessary for any modification of paragraph 33a.

Dr. Karl Duisberg has declared that the combine has "full confidence in the triumph of the German dye industry and also in the superiority of the movements of German incorporated interests over the policy observed by the American trusts."

The project of getting control of the supply of artificial nitrogen will be de-

veloped through a company called "Ammoniawerke Merseburg Oppau G.m.b.H.," with offices at Ludwigshafen and a capital of 5,000,000 marks. This capital will be contributed in cash by the firms belonging to this combine in proportion to their holdings therein.

BROWN WOOLEN MILLS SUFFER \$200,000 FIRE; WILL REBUILD

This office learns with regret that a disastrous fire on May 14 completely destroyed the Brown Woolen Mills, Ltd., successors to the Brown & Wigle Company, Ltd., Kingsville, Ontario, of which George E. Templeton, conductor of the "G. E. T." column in The REPORTER, is superintendent of dyeing.

The blaze started at 1 o'clock p. m. and the buildings destroyed included one five-story structure, 70x80; the picker house building, 40x90, including raw stock; the dyehouse, 70x80, which was new and in process of receiving additional equipment, and a storehouse containing finished goods and also some raw stock, which was saved.

The value of the destroyed picker house building alone was \$75,000, and the total loss is estimated at \$200,000, of which \$100,000 was covered by insurance. The mills had orders on hand for five months' run, and officials will endeavor to obtain another mill to fill these orders pending the completion of plans for rebuilding.

This publication extends its sympathy and best wishes for a quick "come-back" to members of the mill organization.

DU PONT ADDS MANY COLORS TO LIST NOW ON MARKET

Fast Black L, Acid Violet and Acid Green, Fuchsine, Two Soluble Blues and Two Paper Scar- lets Feature the Trade Announcement

In an important announcement recently issued to the trade, the Dyestuff Department of E. I. du Pont de Nemours & Co., Wilmington, lists the following colors which have been recently placed upon the market by that firm: Pontamine Fast Black L, Pontacyl Violet RL, Pontacyl Dark Green T, Du Pont Soluble Blue R and Du Pont Soluble Blue 3R, Du Pont Fuchsine Concentrated Powder, Du Pont Paper Scarlet RX and Du Pont Paper Scarlet GX.

Pontamine Fast Black L is offered as being chemically identical and equal in strength, solubility and all-around fastnesses to the pre-war Benzo Fast Black L. This product finds extensive application in the dyeing of grays on cotton goods where the requisites are good fastness to light, weak acid and alkali, and where even dyeing is desired. It is well adapted for use on a padding machine as well as in all kinds of circulating machines on account of its excellent solubility, and as is well known, it is one of the most important colors for grays for the cotton industry. It likewise finds extensive application on half silk, as it has the property of dyeing both silk and cotton practically the same shade.

Pontacyl Violet RL is an acid violet which corresponds to pre-war Victoria Violet RL. Distinguished chiefly by its good leveling powers and its great fastness to light—being in this latter respect faster than practically all other acid violets—it should find its principal application for mode shades and navy blues.

Where dark greens are desired to be of good fastness to light, and of good penetration, it is expected that Pontacyl Dark Green T will find favor. This product is an acid green, and will no doubt be received with interest by dyers of silk as well as hat dyers.

Du Pont Soluble Blue R and Du Pont Soluble Blue 3R are particularly offered for the paper trade, and are standardized for this purpose.

On account of its solubility and shades, in which qualities it is offered as fully the equal of pre-war Fuchsine, Du Pont Fuchsine Concentrated Powder should be interesting to dyers of cotton, silk, paper, etc. Particularly adaptable to the paper trades are Du Pont Paper Scarlet RX and Du Pont Paper Scarlet GX, since these two products are similar in strength and properties to pre-war Beater Scarlets, including Croceine Scarlets. These new scarlets, however, are offered for use in the beater and not for use by the dipping process.

1921 FALL SEASON COLOR CARD SHOWS 78 HUES AND CASTS

66 Silk Colors and 12 Wool Indicate Autumn Modes—10 for Shoes, Leather and Hosiery

The Textile Color Card Association of the United States, Inc., has just released to the trade the 1921 Fall Season Color Card, containing seventy-eight colors, sixty-six of which are portrayed in silk and twelve in wool. This card is America's forecast for fashionable colors for the coming autumn and winter season, and includes the latest color creations that will be employed by all branches of industry.

Under separate captions are ten shoe, leather and hosiery colors especially selected for these respective trades, thus assuring a link of color harmony between all allied industries.

The card is a veritable pageant of color, opened by what can aptly be called a prelude of evening shades that recall the charming color combinations of a Watteau picture. The colors in this category have a soft touch of delicacy that suggests more of the pastel persuasion that has been evidenced for several seasons. Some of these are: Elf, a pale green; Rose-leaf, a dainty pink; Butterfly, a light

citron: Afterglow, a bluish lavender; Aurora, a flame-shot coral

After the evening shades come the more conservative tones, though, owing to the continued demand for bright, joyous colors, the card is splashed with many beautiful vivid shades that stand out in cameo relief.

Dulcet grays, grayish blues, and light, medium and dark tans and browns form a soft, pleasing background that enhances the many novelty shades of bolder character and, incidentally, create color combinations that in themselves prove most interesting.

Three unusual blues with green undertones are called Waterfall, Rapids and Whirlpool, while in striking contrast are three decided novelties of exotic temperament, called Formosa, Satsuma and Fujiyama. These are the pale coppery shades of pinkish cast that the artists of ancient Nippon used with such subtle skill.

The purple family is brilliantly introduced by a light vivid hue called Hepatica, which deepens into the now well-known shades of Grapejuice and Loganberry.

New greens of the Jade type are ably illustrated by two called Opal and Matrix. Fanciful corals, called Bermuda and Gaiety, darken into flaming red of Poppy.

A burnished copper-red is called Buddha. This is an unusual shade and suggests pagan temples, also subtle hues of antique lacquer.

Navy blues are, as usual, represented by the good standards 2, 3 and Midnight, and in contrast there are some excellent yellows, ranging from the early springtime Daffodil to a rich gold shade called Nugget and the roseate-yellow rays of "Sunburst."

Browns refuse to be supplanted and are to run the gamut of many ranges, including the light tones of Buff and Bobolink, slightly pink in tone; also Meadowlark, a smart tan of slightly grayish suggestion.

Three new browns bordering on the copper and rust tones are aptly named Indian, Gypsy and Eskimo.

Another group of browns show the duller tones with less gold in their making. These are named Arab, Sahara and Mecca. Two rich mahogany shades are called Cuba and Morro.

There is a very pleasing range of browns that have been recalled from the 1921 Spring Card. This opens with a very light straw color called Raffia, and deepens gradually into Seal through the transition of shades called Bamboo, Filbert and Autumn.

Scarab green again makes its appearance, and is preceded by a lighter tone called Yama—after the god of Hindu mythology who was always depicted in green.

In the woolen group browns lead in importance, there being six distinctly different shades included. These are Saddle, Friar, Java, Mocha, Nubian and Lama. Two grays are called Pilgrim and Plymouth. There is one dark green called Forest and one green of extremely bluish persuasion called Balsam. A deep Navy of slightly purple cast and an odd shade of blue with green undertone called Bagdad.

In the shoe, leather and hosiery colors, browns in various shades are heralded. These include Gold Brown and a new shade called Hazel, rather light in tone but with less gold; Sponge, a light tan; Camel, similar to beaver, and Chippendale, also known as Cordovan. Mouse is a decided novelty and suggests a cross between a tan and gray. There are also three distinct metal grays of

light and medium shades, called Silver, Nickel and Steel; and, last but not least, the standard Bronze.

The entire list of colors indicates a comprehensive study of the color requirements of fashion, and warrants the prediction that this card will render in even greater measure its recognized service to American industry.

BEARING OF A SYNTHETIC DYE INDUSTRY UPON OUR NATIONAL WELFARE

(Concluded from last week.)

Following the armistice, large numbers of young men entered our universities filled with enthusiasm over the prospects of developing in our country a great dye industry, and eager to prepare themselves for a worthy part in that expected development. The attitude of Congress, in holding up for nearly two years the legislation necessary to protect and encourage this business, has chilled the enthusiasm of these students, and many are either in serious doubt as to the wisdom of embarking upon such a career, or have already switched to something else. A continuance of this attitude on the part of the Congress will result in an immediate and considerable reduction in the number of young men selecting organic chemistry as a profession, and should our country be forced into war in the near future, she will once more be wholly unprepared through absence of the experts necessary to increase her output of ammunitions, and the lack of officers for the industrial army is fully as serious as for the military army.

Of the 214 concerns engaged in the manufacture of dyes or intermediates in the calendar year, 1919, 65 maintained separate research laboratories for the investigation of problems arising in the works and for the discovery of new substances or improved processes. The amount of money spent on these laboratories that year for salaries, apparatus and supplies, deducting the salable products

turned out by them, but without figuring any overhead or all the cost of translating test-tube results into successful large-scale operation, was \$4,274,247.

WHAT WOULD THE LOSS OF THIS INDUSTRY MEAN TO US?

Let us understand fully what the curtailment or abandonment of this industry is likely to involve, for it is not so much the amount of money involved, although that is considerable, as it is the bearing upon our life as a nation that counts. Its immediate consequences, some of which are making their appearance even now, may be briefly recapitulated as follows:

1. Thousands of unskilled laborers thrown out of employment.

2. Large numbers of specially trained technical experts forced to seek other means of livelihood, and the economic loss involved in scrapping the experience gained in the dye industry.

3. Abandonment by the manufacturers of all plans for development and expansion, and the closing of plants now in operation.

4. Fewer students for the courses in chemistry at our educational institutions.

5. Termination or reduction of research work, both in the laboratories of the industry and in co-operative investigations with educational institutions, with all that this implies in retardation of the development of our science at a time when the world is looking to us to take the leadership.

6. Inability of teachers of applied organic chemistry to give their students up-to-date information in the field of synthetic dyes, through loss of personal contact with the manufacturer, and an inevitable resulting dependence upon the ancient history of the average text book of industrial chemistry.

7. Subjugation of our great textile industry, and of other industries using dyes or dye intermediates, by foreign manufacturers, and in the event

of our being cut off from such supplies by another war, once again to be face to face with a famine, not only in the dyes needed for our flags, uniforms, and other articles, and the bacteriological stains for the diagnosis of disease, but in many indispensable drugs and in compounds of serious concern to the manufacturers of photographic chemicals, food preservatives, explosives, toxic gases and other war munitions, paints, inks, perfumes and flavoring principles, artificial resins, plastics, tannins, and accelerators for rubber vulcanization; the distilling of coal tar and the recovery of by-products from the coking of coal will also suffer from the loss of this market for their products.

8. Should we be one of the belligerents, there will be but few dye plants available for conversion to munition manufacturing (be it explosives, toxic gases, smokes, incendiaries, or what not), and no reserve of trained men to take charge of such operations. It is trite, but true, that modern military power is dependent upon industrial organization and efficiency.

9. Domination of our trade in dyes and dye intermediates, by Germany for example, is quite certain to lead to the control of others of our industries as well, until the penetration of our industrial fiber will resemble that of the chestnut tree by the deadly fungus which has so nearly obliterated these beautiful trees from our groves.

10. The world markets open to other nations will be inaccessible to us.

It is no exaggeration to say that the life of the State, as of the individual, some day may be decided by the existence or non-existence here of a well-developed, expanding and progressive synthetic dye industry, and if this hasty and very imperfect presentation of the subject has helped to give you any better appreciation of its significance to all of us, I shall feel well repaid for the time spent in putting together these rather rambling remarks.

As chemical warfare was responsible for nearly a third of all our casualties in the war, and as this proportion is quite certain to be higher in future conflicts, it is idle to talk about disarmament without including the munition plants represented by Germany's great dye industry and nitrogen-fixation units. Because of the role which these play in the economic life of the nation at peace, they cannot be destroyed without destroying Germany as well. Where disarmament is impossible, there is but one answer—counterbalancing armament. Hence, the one sane and practicable disarmament which we can really accomplish is an offsetting equivalent or superior development of our own dye and air-nitrogen industries. It is the most effective guarantee of peace, and in the long run much the cheapest form of insurance.

The important question is "Do you want the synthetic dye industry to remain and develop in this country, or not?" If you do not, or are wholly indifferent, take no action whatever. The German propaganda and its friends will do the rest for you. But if you are convinced that this industry is linked in so vital and intimate a manner with the welfare of our citizens and the safety of our State that it is essential to the maintenance of our proud position among the nations of the world, you will do what you can to see to it that such legislation is promptly enacted as will provide adequate protection while the industry is still adolescent and vulnerable,

and will immediately wire your Senators and Representatives in the Congress urging such action upon them, for "Where there is no vision, the people perish."

Dye-a-Grams

It is possible, we assume, that when a man becomes efficient at burglary he will be classed as an efficiency expert.

—o—

Mill officials have had plenty of opportunity to note, of late, that when a man is jobless he is willing to work.

—o—

Papers say that sheep are decreasing in the United States. Well, 'tanyrate there's enough wool left in the country to pull over the people's eyes for some time to come.

—o—

Every banker has confidence in the future. Sure; ask for a loan and you'll find it's collateral.

—o—

To those who are ever pessimistic this department would point out that the old and thoroughly reliable firm of "Grin & Bearit" never fail!

—o—

WHAT KIND OF GOODS WILL DYE BEST?—*Headline from "Dye-stuffs."* These days we'd say: Goods on Order; Delivery P. D. Q.!

We are impelled to wonder at this late day if the much-talked-of restlessness among the fair sex earlier in the year wasn't due to those Khaki All Wool Heather Mixed stockings!

G. E. T.

CHOOSE HERMAN A. METZ TO HEAD TRADE CONGRESS

Herman A. Metz has been elected general chairman of the national co-operating committee of the Southern Commercial Congress, which has opened permanent headquarters in the Waldorf-Astoria. The organization, which is composed of more than 100 business leaders, was organized in 1917 under the leadership of Oscar S. Straus. Mr. Metz will be assisted by Dr. Clarence J. Owens, director-general, who will direct the work of the local and Washington offices.

The committee will hold its next meeting Wednesday, June 1. The conference will be followed by a dinner given by Mr. Metz, at which the guests of honor will be Eugene Mayer, Jr., managing director of the War Finance Corporation; Assistant Secretary of Commerce Claudius H. Huston, former Secretary of the Interior Hoke Smith, Duncan U. Fletcher, of the International High Commission, and Senor Frederico Alfonso Pezet, Peruvian minister to the United States.

JAPANESE CURTAIL BLEACHING POWDER OUTPUT

For a greater part of last year Japanese manufacturers of bleaching powder carried out the curtailment of production by 40 to 50 per cent, with the result that by the end of November the amount of the stock was considerably reduced, says the Tokio "Weekly Druggist." The manufacturers therefore revised the rate of curtailment to 35 per cent for December, and consequently the output of bleaching powder for the month increased by 555,660 pounds as compared with November, and that of caustic soda by 289,838 pounds.



AMERICAN DYESTUFF REPORTER

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NEXT: THE LONGWORTH RESOLUTION

With Enactment of Emergency Tariff and Modified Knox
Amendment Assured, All Eyes Are Turned Toward Re-
publican Caucus Which Means Much to Dye Industry

WHenever there is a combat or a contest of importance impending, such as, for instance, a world's baseball series, a great football game, a debate over a Congressional bill, a world's championship boxing bout or an election for any kind of an office from Justice of the Peace up to President, those whose business it is to utter sweet nothings relatin' and appertainin' thereto always show a marked tendency to retire to some private place and take stock of the existing combination of facts and circumstances directly and indirectly bearing upon the case at hand. And the net result is known the country over, in newspaper offices and out, among rich and poor, highbrows and lowbrows, just and unjust, and in both polite and impolite circles, as "the dope."

Newton's, Boyle's, Charles' and Avogadro's laws state that, all other things being equal, one man's dope is as good as another's; and, as some great Irish philosopher has so knowingly added, oftentimes a great deal better! Be that as it may, each inter-

ested person usually evolves his own dope and then modifies it according to that of others until he strikes some sort of an average. Notice, therefore, is hereby given all and sundry to the effect that whenever we take to doping out anything in the columns of The REPORTER, now or in future, the above definition of "dope" shall be considered to apply. "Only that and nothing more," in the words of E. A. Poe, an American poet (1809-1849). Printing the dope on this, that or something else is recognized as a lawful and legitimate occupation for those engaged in the publishing business, and—ye gods! what would any publication be without something of the sort? Half the pleasure of living comes from speculation as to the future; it is one of the great national and international indoor and outdoor sports, and is not always to be taken too seriously. We endeavor to play the game according to the rules and expect others to recognize the rules and abide by them. We disclaim all responsibility for the dope, for its rightness or its wrongness, once it

has left our hands. We do not make the dope; we merely report it. Sometimes we do not even agree with it, but in such cases we bow our heads and admit that it is mightier than we.

This lengthy preamble is designed to forestall Senator Moses, lest he again denounce us from the floor of the Senate for "gloating" or some such offense against the morals of the community. And be it further understood that in so doing we are not scolding Senator Moses. We are merely telling him.

There are no disconcerting changes in the outlook this week anyway. The dope says that the chances of the Longworth resolution, making the provisions of the permanent tariff bill effective from the moment it is reported from committee, look a little better than they did at this time last week. This is encouraging, for it is a most important measure to the dye industry and to the nation. At this writing there is no prospect of finding out what will be done with it, for Republican members of the House are planning to hold a caucus and this prospect has delayed action. It is believed, however, that they will declare in favor of it, and a strong reason for this belief results from the fact that it will find wide support in many sections of the country. Best of all, it is not a dye bill—although it carries with it that which the industry will sorely need when the three months of grace expire—and attention, therefore, will not be focussed sharply upon what has proved to be a mighty contentious subject.

Secretary of Commerce Herbert Hoover has supported it with the following words:

"It seems to me desirable that the new tariff should be made legally effective upon the introduction of the bill to Congress. This is the custom in many other countries. It prevents a large amount of speculation. Of even more importance, however, is the fact that during the period of legislation there is always a flood of goods in anticipation of the tariff.

This decreases the revenue and renders the position of our commercial community difficult, and the presence of these goods and their subsequent realization handicaps the effect of the tariff for many months, or even years, after its passage."

There have been objections to this innovation in American legislative procedure on the ground that it would, if reductions were made in the various schedules, necessitate a complex and laborious system of refunds to importers. "I do not believe," states Mr. Hoover, "that this is an insuperable administrative problem, and in any event it has not proved so in other countries."

The result of the caucus will more likely than not be known before this can be printed, and all that can be said just now is that the chances of favorable action appear to have improved. There is much at stake, but the consequences of leaving the dye industry unprotected for several months at this time are too well known to need elaborating upon once more. And with the passing of the days, the action of the conference in reducing the time of protection provided by the Knox amendment grows more and more difficult to understand. Certain it is that those who, in the conference between representatives of the House and Senate, advocated and carried through this reduction of time, were guilty of an exceedingly unsportsmanlike action, and of an action, moreover, which can do their cause no possible good. This is a time when our legislative house is being put in order, and a number of radical changes are to be made. Congress, as a whole, is now engaged in determining what these changes shall be. It is assumed that the final results will represent the wishes of a majority of the people, and therefore it is most unwise to endeavor to anticipate them.

Opposers of protection for the dye industry must realize that in all likelihood their own intent with regard to the industry is not the same as the

intent of the whole Congress, and must realize also that their success in having the period of protection shortened can have no influence on the final outcome. What they appear to realize best of all, however, is the fact that by their action they have simply thrown the industry into a state of uncertainty and thus arrested its development for several more months, since plans for expansion and the conquest of further items on the present "importable" list do not flourish under such conditions. All other periods of protection granted by the Emergency Tariff bill are to remain in effect for six months; whereas the dye industry alone was singled out for the three-month wall. A report came down from Washington from somebody's news bureau to the effect that the House leaders planned to pass the permanent tariff within three months, and that the dye protection was reduced for that reason. Sounds reasonable! Rather a pity, though, to take so much trouble, since the emergency provisions would go into the discard automatically when the bill was enacted anyway! No, that will scarcely hold water. The only explanation can be that the opposing minority were so insistent on taking a last dig at the industry that they were finally allowed to have their way in order to appease them. But it is a bad thing for all hands, and it may safely be said that honest opposition to a measure of any sort does not usually take the form manifested on this

occasion. Honest opposition would say: If it's wrong to give the industry so much protection, three months one way or the other cannot make any difference; but, on the other hand, if I'm wrong and protection is right—or is the will of the people, whether I happen to agree or not—it would certainly be unfair to remove that protection until the discussion is settled. I shall have my chance to oppose it while the debate is on.

The Emergency Tariff bill has been approved, and at this writing is awaiting the President's signature, which it will receive. All eyes are now turned toward the Longworth resolution, which, if passed, will supplant the rates and provisions of the emergency tariff immediately the bill proper is called up. And thus, if all goes well, will the American dye industry be saved a vast deal of wholly unnecessary commotion and vexation.

The real marvel is that the industry has attained its present efficiency. This is a point not considered by those of the opposition who, when not shouting at the top of their lungs that the country is about to be strangled in the grip of this huge, venomous reptile, are whispering that it doesn't seem, somehow, as though American dye manufacturers were gaining ground as rapidly as they should and maybe they don't deserve protection. They forget that not once since it came into being has the dye industry been sure of its ground and free to forget legislation long

enough to bring in more capital for research. No one wants to throw himself beyond recall into a business proposition the life of which is a matter of conjecture, and therefore, in ring parlance, the dye makers have been obliged to "pull" their punches to a considerable extent. Neither the redoubtable Dempsey nor the agile Carpentier would display much activity in a bout which they knew might be declared off during almost

any round and the gate receipts confiscated by the Government.

Once being assured, however, that it is free to "mix it up" with its sparring partner, Battling Benzol, the American dye industry will speedily round into a form which will permit of its taking on its real opponent, Kid Cartel, gentlemen, Kid Cartel, hitherto undefeated heavyweight champion of the world!

ITALIAN DYE MAKERS FEELING EFFECTS OF "BUYERS' STRIKE"

General Tightening Up of Retail Purchases Similar to That in United States—Germans Taking Advantage of Low Exchange—American Dye Manufacturers Under-rated Value of Italian Market, "Reporter" Correspondent Thinks

BY RAFFAELE SANSONE

Genoa, April 30.

Special to The REPORTER.

The Italian dye industry suffered very severely during April due to the crisis in its affairs which has been impending for some months and which was finally brought on by the great reduction in the demand on the part of the color-consuming industries. Other causes which contributed not a little to the harassment of the industry were the shortage of color works chemists, the prejudice of the dyers and printers against the use of Italian dyes, the competition of German dyes, and a further reduction in foreign exchange.

The reduction in demand on the part of the industries using dyes was the result of the great local restriction in the consumption of colored goods of every nature—a natural consequence of their ever-increasing price, which has rendered the retail buyers more and more prudent and less inclined to be reckless in purchasing than before the war.

Another reason for the reduction in the demand was the rush by large numbers of shopkeepers and merchants to sell off, at a great profit, their old stocks purchased at very low prices and held back for the express purpose of taking advantage of the high prices which were bound to follow such a course—a

much more profitable operation, it need hardly be said, than purchasing colored goods at the present high quotations and running the risk of having to sell at a loss through a sudden reduction in prices.

A third reason for the decreased demand may be found in the fact that cheap foreign goods, coming particularly from Germany, Austria and Czecho-Slovakia, have been gradually inundating the market, Italian merchants in many instances finding it more advantageous to purchase them than the goods offered by the domestic industry. This is clearly demonstrated by the statistics of 1920, which show that Italy imported from Germany goods valued at 821,536,700 lire, while only exporting to that country goods valued at 280,274,621 lire.

A fourth reason is that the great increase in the price of dyes of all sorts has caused manufacturers of colored goods to resort to any means within their power to reduce the quantity used, often utilizing materials already colored in order to lessen their expenses in this direction. As a direct result of this, the number of fabrics produced from colored mechanical wool has increased enormously and cotton has been introduced into this class of goods in

larger quantities than was ever the practice before the war. Fabrics have also been extensively produced in which, over a white cotton framing, a frail wool covering has been applied, generally of mechanical wool and very easily worn away.

Shortage of Industrial Chemists—The shortage of industrial chemists capable of manufacturing dyestuffs has been caused by the lack of interest taken in the Italian dye industry generally and the few opportunities which it affords the prospective dye chemist seeking a sure, stable position. This is in part due to the fact that the majority of Italian colorists prefer to give their attention principally to the application of dyestuffs rather than to their manufacture, or else to avail themselves of the opportunities offered by foreign color manufacturers, by whom they are better appreciated and recompensed owing to the longer standing of the industry in these quarters.

Prejudice Against the Use of Italian Dyes—The existing prejudice against the use of Italian dyes is quite unwarranted, and ample evidence of this is displayed by the fact that many are sold—even in competition with those of foreign manufacture—in the European Orient, in the Balkans, in India, in China, in Japan, in Spain, in Brazil and in Mexico. Italy is said to produce 90 per cent of its needs in sulphate colors and azo colors. At the same time, few basic colors have been produced by the Italian dye makers. The total imports of coloring and tanning materials during 1920 reached a value of 197,908,720 lire, while the exports amounted only to 41,846,200 lire.

German Dyes—A paragraph of the Versailles Treaty gave to Italy the right to receive from Germany a certain quantity of coloring material, and this the Italian Government drew and sold during April to the various dye and print works through the usual commission. Aside from this the German dye manufacturers took advantage of the low value of the mark in comparison with the Italian lira, of former business connections with the Italian dye markets, and of their customary commer-

cial ability to introduce on their own account in Italy other large batches of artificial dyes. Being so favored, the German industry has invaded the Italian market and is suffocating, little by little, the infant Italian dye industry, and in order to prevent the complete extinction of the latter there is at present a movement on foot for Government intervention, the hope being that legislation will be enacted levying an unusually high import tax on dyes, and particularly on such dyes as are produced in Italy.

New Arrangements for War Reparation Products—Through the Minister of the Treasury there has been created a committee for the establishing of a definite program to be followed in the case of raw materials, construction materials and other goods received from Germany as part of the war reparations. This committee is to have supervision over the deliveries and sale of such goods, while their reception, transportation and storage are entrusted

(Continued on page 12.)

AMERICAN DYESTUFF REPORTER

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A. P. HOWES, President
LAURANCE T. CLARK, Editor

LESSONS FROM ITALY

There is a lesson for those interested in the welfare of the American dye industry in almost every line of the correspondence this week of Raffaele Sansone, who writes interestingly from Genoa of the slump in the Italian dye industry caused by excessive post-war economy on the part of the ultimate consumer, and by the activities of the Germans in entering the Italian markets as competitors of the domestic manufacturers.

There should be a valuable illustration for Senators Moses and King, for instance, in the concrete example furnished them of the inevitable outcome of failure to act promptly when dealing with the Cartel. These two gentlemen have been particularly active in arguing against more than ordinary protection, and in so doing they have repeatedly scouted the predictions of others as to what would happen if the bars were let down. Yet the very things which have been forecast for our own industry are taking place before their eyes in Italy, if they care to look into the situation there, and further refusal on their part to see and profit by such an illustration can only be regarded as most unsound judgment.

In Italy the Germans have not been slow to take advantage of the vast differences in exchange values between the mark and the lira, nor have they neglected to resume former business connections in as many cases as possible. In a number of instances they must have found the machinery for selling dyestuffs and the personnel for

its operation virtually intact—which gives them an enormous advantage over the domestic manufacturers because of the many years of preparatory work already given to this field.

There is hardly a country where this same preparatory work has not been done, and the United States is certainly far from being an exception. There is now a movement on foot in Italy to induce the Government of that nation to impose heavy duties on dyes, and especially the dyes which are already made in Italy.

The Italians, too, will learn eventually that duties of this sort, if high enough to be effective, will merely result in a general advance in the price of dyes in that country, so that there will be little to choose between so far as the consumer is concerned—and the country will be without a developed dye industry, which, in these days, is equivalent to being almost helpless before any country so equipped. And for the further benefit of the gentlemen from New Hampshire and Utah, let attention once again be called to the fact that the difference between the Italian lira and the German mark is not nearly so great as the difference between the United States dollar and the mark—and that the selective embargo plan does not raise the price of dyes, yet admits anything to the country which the consumer cannot get within our borders.

Italy cannot be advised to follow the example thus far set by the United States if she would maintain her own coal-tar chemical independence, but both she and the United States might with great profit follow in the lead of England, which is the only country possessing a real, workmanlike, practical solution to the problem of protecting dye manufacturer and dye consumer at the same time. It is to our own interest as well as to the interest of other nations that they all may be provided with their own color industries, since the dream of a mutual limiting of armaments cannot become a reality while one nation remains supreme in this respect, nor is any nation prepared even to discuss such a thing while it re-

mains without protective legislation of the English type.

We may also see in Italy another inevitable outcome of governmental apathy toward this question. Failure to use the muscles of the body, if allowed to continue long enough, results eventually in loss of power, and thus we see the muscles of the Italian dye industry, its chemists, losing their power and becoming scarcer, because they are not made use of. Drastic protective legislation placing the industry in an assured position for a limited period of time would stimulate many young men to take up the profession of color chemist; the universities would respond with better courses of instruction, the industry would grow and in this way feed itself in this respect. There is not a shortage of chemists in the United States, but speaking for the dye industry alone, it is also certain that progress has not been as great, nor have as many experts of unusual brilliance been developed, as would have been the case had the dye industry known just how

long it might expect protection during the past two or three years.

MISS SIMMONS TO TELL AD. MEN OF DYE PUBLICITY

"How American Dyestuffs Are Advertised and Marketed to the Mill Trades" will be the subject of an address to be made by Minna Hall Simmons, of New York, before the Advertising Women's Conference at the convention of the Associated Advertising Clubs of the World to be held in Atlanta, June 12 to 16.

Miss Simmons heads the Minna Hall Simmons Advertising Service Agency, New York City ("The Woman's Viewpoint Backed by a Long Experience in All Branches of Advertising"), and is vice-president of the New York League of Advertising Women. She was actively engaged in the dyestuffs field during the war period, and is keenly interested in American dyestuffs.

ITALIAN DYE MAKERS FEELING EFFECTS OF "BUYERS' STRIKE"

(Continued from page 9.)

ed to the general direction of the Italian State Railways.

Quotations on Coloring Materials—A further reduction in foreign exchange followed during April, bringing the United States dollar from 24.21 lire to 20 lire; the English pound sterling from 95.82 lire to 80.57 lire; the French franc from 1.71 lire to 1.47 lire, and the German mark from 0.40 lire to 0.32 lire. A slight recovery took place in these values toward the end of the month, but the reduction brought down the prices of dyestuffs very considerably, causing a panic among those carrying stocks, and preventing many manufacturers of dyes and colored goods from giving orders in the hope of a further decline. Some of the reductions in the prices of dyestuffs and dyewood extracts during April were as follows: Nigrosine crystals fell from 30 lire to 28 lire, Direct Black from 40 lire to 35 lire, Fustic extract from 10 to 9, Logwood extract from 10 to 9 and Hematine crystals from 17 lire to 15 lire.

American Dye Exports to Italy—The exports of dyestuffs from the United States to Italy showed little development during April, and few were the American firms which were represented or did any substantial business. The reason for this state of affairs is not to be found in the quality of the products offered but rather in the means adopted by American firms for making their products known. Before the

war—and to a certain extent since—German color works deluged the Italian market and dye works with pattern cards, samples and books advertising the value and uses of their products, and all the technical journals were filled with advertisements of their wares. In addition, expert colorists and chemists were sent out to furnish gratuitous instructions in the application of dyestuffs to the dyers and printers whenever advice was required, and in this way Italian consumers generally found in the German color works good friends and often protectors, and their products, naturally, were preferred to all others, which were virtually ousted from the market.

American Foreign Trade Policy—A similarly effective policy was very seldom, if ever, adopted by the American dye manufacturers, who often preferred to entrust the sale of their products to firms engaged in exporting from the United States chemicals, foodstuffs and even metals; and these, not understanding sufficiently how to cater to the wants of Italian color users, limited business to a few occasional orders given mostly by speculators who resold the goods at exorbitant prices, thereby spoiling, indirectly, the future of American products. How different it would have been if the American color works had negotiated the sale of their products directly with the Italian consumers, making themselves and their goods known through the continual sending out of circulars, pattern cards, samples and salesmen and by the establishing of representatives in such cities as Genoa, Milan, Turin, Florence, Naples and Venice! One of the reasons why this was not done may be because the value of the Italian market was underestimated owing to its unfavorable condition during the war, when the productive capacity of the country was crippled and greatly reduced through the military activities of the majority of its operatives, merchants, technical people and labor.

Such conditions, however, are now quite over, and renewed energy and initiative will soon bring Italy back to its former activity and efficiency.

Mordants, Assistants, Dyehouse Products, Etc.—There was a scarcity in Italy of such products as acetate of ammonia, acetate of iron, acetate of chrome, nitro-acetate of chrome, iron alum, stannic chloride, stannous chloride, chromate of potash, hydrosulphite of soda, beta-naphthol, nitrate of lead, persulphate of potash, sulphate of zinc, sulphocyanide of ammonia, zinc powder, etc. Paranitraniline was offered principally by English, German and Italian firms, and aniline oil and aniline salt of national and foreign production was not difficult to obtain. The Germans are said to be preparing to export large quantities of tannic acid to Italy, where this product is preferred to sumac leaves, since the latter can really only be used to advantage for medium and dark shades.

Prices of Dyehouse Products—The gain in value of the Italian lira caused a certain reduction in the prices of many mordants. Some of the quotations per hundred kilos were as follows: Acetate of alumina, 100 lire; chrome alum, 425 lire; bichromate of soda, 950 lire; bichromate of potash, 1,350 lire; ferrous sulphate, 60 lire; copper sulphate, 300 lire; tartar emetic, 2,250 lire; aniline oil, 1,400 lire; white refined glycerine, 800 lire; hydrogen peroxide, 80 lire; tannic acid, 60 per cent, 3,400 lire; tartaric acid crystals, 1,700 lire; acetic acid, 30 per cent, 500 lire; hydrochloric acid, 20-21 deg. Be., 48 lire; formic acid, 80/85, 400 lire; lactic acid, 80 per cent, 500 lire; oxalic acid, 1,000 lire; alum, 260 lire; ammonia, 220 deg. Be., 320 lire; bisulphite

of soda, 65 lire; chlorate of potash, 395 lire; chloride of ammonia, 850 lire; bleaching powder, 80 lire; nitrite of soda, 600 lire; yellow prussiate of potash, 1,350 lire; yellow prussiate of soda, 850 lire; caustic soda, 76/78, 235 to 240 lire; silicate of soda, 170 lire, and sodium sulphide, 230 lire.

SEVENTH CHEMICAL SHOW, IN EIGHTH COAST ARTILLERY ARMORY, TO BE NINTH WONDER OF WORLD

**And the Eighth? Why, the American
Dye Industry—Event to Follow
Meetings of A. C. S. and S. C. I.**

Announcement has just been made that the Seventh National Exposition of Chemical Industries will be held in the Eighth Coast Artillery Armory, Jerome Avenue and Kingsbridge Road, New York City, during the week beginning September 12. Not only will the exposition this year be the greatest ever held by the chemical organizations of the United State, but it will also be one of the largest industrial displays ever staged in any part of the world. More than 400 separate exhibits will be on the floor of the huge building when the exposition is opened to the public.

For the past few years the annual chemical exhibition has been housed in Grand Central Palace, but because that place has been discontinued as a site for shows and expositions the management had to find other quarters. The very greatness of the

Chemical Exposition, which has grown to be the largest thing of its kind within the past couple of years, brought a difficult problem before the management. Exhibitors counseled against going away from New York; and finally, after a thorough canvass of the situation, it was discovered that the Eighth Coast Artillery Armory was the only structure that would take care of the exposition.

Negotiations were immediately begun, and by good fortune the armory building was available for the period wanted by the show management. The building, with its drill floor covering an area the equivalent of five city blocks, offers an ideal setting for exhibition purposes. It will easily house the 400 or more exhibits, and do it all on one floor, something that could not be accomplished at the Palace. Then, again, there is not a post or pillar in the armory to obstruct the view, which will give the show this year all the appearance of a world's fair while yet being an exposition for specialized industries.

Not only will the exposition this year exceed all previous ones in size, area of exhibit space utilized, and importance, but it will also be attended by the world's most noted chemical experts.

Already Great Britain has decided to send a representative delegation to study American chemical development, while Canada, which has always co-operated with the chemists of the States in their expositions, will also send representatives. Last year there were prominent visitors to the exhibit from several European countries, South and Central America and the Orient, and these visitors were greatly impressed with the expansion of chemistry in the United States during the past five years. In fact, since the war America has taken the lead in the world's chemical industry, and every foreign nation, particularly the ones that formerly did a big business with Germany, is greatly interested in the progress America has made.

One important reason for holding

the chemical exposition during the week of September 12 is that it will immediately follow a convocation of chemical and industrial societies in New York City, and the date will give the members of these organizations a chance to enjoy the exhibits. Foreign chemists are also greatly interested in these meetings, and no doubt many representatives from abroad will be here to attend the gatherings. During the week of the exposition there will be a meeting of British and Canadian technical and business men, and chemical and industrial societies are preparing to take care of the largest registration in their history because of the meetings and exposition coming practically at the same time.

Among the big events that immediately precede the annual exhibition is the general meeting of the American Chemical Society, which will be held the latter part of the previous week, and a meeting of the Society of Chemical Industry, which will be held in conjunction with that of the first-named body. The gathering of the Society of Chemical Industry will have an international complexion, for it will be a continuation of a big general meeting in Canada. Programs for these events are now in the formative stage and will be announced later.

The program of the exposition proper this year promises many new features. The moving pictures, for instance, will be shown in an auditorium that will for the first time be suitable, for the armory has a hall that has a seating capacity and arrangement equal to many theaters. This will also offer an ideal place for the many symposiums that will be held, while there will be a dining room in the armory that will accommodate 1,400 persons.

Already special sections of exhibits are being arranged for, and these will undoubtedly commend themselves to the careful consideration of the technical men when they visit the armory. The new standards of busi-

ness procedure and revision of costs make necessary the adoption of every business to the new demands, and much real information along this line will be gained from a study of these exhibits.

Dr. Charles H. Herty, editor of the "Journal of Industrial and Engineering Chemistry," is chairman of the advisory committee in charge of the 1921 exposition. Others on this board include: Raymond F. Bacon, director, Mellon Institute; L. H. Baekeland, honorary professor chemical engineering, Columbia University; Harry B. Faber, consulting chemist; John E. Teeple, president, the Chemists' Club; Bernhard C. Hesse, chemist, General Chemical Company; Acheson Smith, president, American Electrochemical Society; A. D. Little, president, Arthur D. Little, Inc.; William F. Nichols, chairman of the board, General Chemical Company; H. C. Parmelee, editor, "Chemical and Metallurgical Engineering"; Fred W. Payne, co-manager of the exposition; R. P. Perry, vice-president, The Barrett Company; Charles F. Roth, co-manager of the exposition; Edgar F. Smith, president, American Chemical Society; T. B. Wagner, vice-president, U. S. Food Products Corporation; David Weson, president, American Institute of Chemical Engineers, and M. C. Whitaker, president, United States Industrial Chemical Company. The headquarters of the exposition are now located at 342 Madison Avenue, New York City.

TESTING THE FASTNESS OF DYEINGS TO LIGHT

By A. S. EICHLIN

The testing of the fastness of dyeings to light is an extremely important matter which should be given most careful attention by producers and consumers of dyed textiles. The vegetable dyes and the few animal dyes have been displaced in greater part by the coal-tar dyes. Practically all methods of the application of these synthetic dyes are known, but knowledge of their performance must be studied even by old experienced dyers who are desirous of finding out for themselves the truth about the colors they use. Furthermore, the present status of the dyestuff industry makes it imperative that more careful criticisms of methods of testing fastness together with other properties of colors should be made.

Statements as to the fastness of dye-stuffs are confusing and at times contradictory; presumably, since no method is known for the accurate comparison of degrees of fading and further since present methods of testing fastness are not uniform.

It is much more convenient to compare fastness of dyeings to light when fabric is used for the tests rather than yarn because the former can be exposed in a more uniform manner.

The results obtained from tests on fabrics will be contradictory and misleading if the presence of finishing or weighting materials is not very carefully considered. For it is a well-known fact that certain finishes have a

marked effect on light fastness of dyed fabrics. Obviously, it is illogical to compare the fastness to light of particular shades of fabrics finished with starch or related products, with fatty oils or with certain kinds of inorganic matter, with the light fastness of fabrics that have not been treated. In some cases the finish increases the light fastness and in others decreases it, and the different finishes on fabrics dyed with a given dyestuff have decidedly different effects. Consequently, the presence or absence of such materials must be considered in the comparison of a dyed fabric which may have been finished with fabric dyed in the laboratory but not finished. Suitable arrangements should be made to compensate for the presence or the absence of a finish. It should also be considered that where the cloth is of such a kind that it will be frequently laundered, the finishing materials will be removed by the first washing, and the light fastness of the laundered material should be properly determined rather than the fastness of the material as factory finished.

After-treatment with metallic salts, as is well known, increases the fastness to light of certain kinds of dyeing, particularly those made with certain direct and sulphur colors. In these cases analytical tests are an important adjunct to light fastness tests. Other kinds of after-treatment, unless a known alteration in shade is produced, cannot be detected by examination, other than chemical, of the dyed fabric. In such a case their use may account for differences in fastness of fabrics supposedly dyed with the same color, produced by different dye houses.

The change in shade of dyeings due to light is a photo-chemical phenomenon differing in nature with different classes of colors which may be positively or negatively catalyzed, or not affected by the following variations in conditions of exposure.

1. Intensity of the light.
2. Duration of exposure.
3. Humidity of the atmosphere.
4. Acidity or alkalinity of the atmosphere.

5. Temperature.

6. Presence or absence of light waves of certain wave lengths or vibrations in the relative number of long and short wave lengths.

No method of testing can be considered suitable unless it has been examined with respect to each of these conditions.

EXPOSURE TO SUNLIGHT

Inasmuch as the change in shade of fabrics due to light, when they are made up into useful articles, is usually due to the effects of sunlight, it is natural to make test exposures to sunlight. A method of testing based on such exposures as would exactly reproduce the conditions under which the article is used would be an ideal method. The most obvious difficulty is the length of time to get the necessary results. In normal summer weather in Washington it would be necessary to allow at least eight weeks in order to obtain adequate data, while such a length of time in winter would be much too short. Hence, the laboratory dealing with a great number of fabrics on which results must be obtained quickly cannot use this method of sunlight exposure. Especially is this true of the chemist engaged in the study of methods of producing mode shades fast to light who cannot afford to wait any such length of time for results.

A number of other difficulties attend the use of sunlight, among which may be mentioned the variations in the intensity and duration of the light from hour to hour, from season to season, from year to year and also with the latitude. Colors which fade in sunlight have been known, according to Gebhard, in the "Journal of Soc. of Dyers and Colourists," 27, 133, to return in diffused daylight.

Furthermore, it has been noted by the writer that dyeings exposed in a smokeless city, like Washington, are affected differently from dyeings exposed in industrial centers. This difference is due, not so much to differences in sunlight, as to the presence of

sulphur fumes from burning coal. Hence, appropriate methods should be used to test for fastness to coal smoke.

Contradictory and confusing results will be obtained if the samples for exposure are exposed behind different kinds of glass or to less than the full sky. In general, glass will absorb the shorter wave lengths. Consequently, dyestuffs which are particularly affected by the shorter wave lengths will not fade as rapidly behind glass as will dyestuffs which are chiefly affected by the longer wave lengths.

On the other hand, if exposure is made to the full effect of the weather, sun, rain, dust, smoke and dew, the results may not be representative of the use to which the fabric will be put. The most obvious objection to this method of testing is the laborious and onerous work and loss of time necessitated in the handling of the frames. Much of the intensity of illumination of an exposed fabric is due to reflection. Dyeings exposed on one side of a building will not fade as rapidly as dyeings exposed to the full sky. In all cases of exposure to sunlight, the dyeings to be tested should be put upon a roof in order to obtain the effects of constant illumination.

It has been suggested that a method for obtaining uniform exposure to sunlight would be to prepare a considerable quantity of fabric dyed with a well-known color moderately fast to light together with other samples possessing approximately the same depth of shade in order to get an idea of the relative intensity of the light. These samples are then compared, after certain intervals, with a carefully preserved sample from the first exposure. Such testing

is open to the objection that the effects of certain atmospheric conditions such as alkalinity, acidity and humidity are different on the photo-chemical reactions responsible for the color changes. It is quite possible that variations in these conditions might lead to serious confusion in the results of the exposures. On the whole, however, this method seems to be the least open to objection of any that have been investigated. Congo Red and Sulphur Yellow 2R on cotton have been used in this way. In order to obtain better conditions for laboratory tests that attempt to eliminate the inconveniences and loss of time necessitated by the above-mentioned methods, various methods have been introduced which make use of artificial lights.

ARTIFICIAL LIGHTS

The artificial lights on the market for dye-fading purposes are of two general types, flaming arc lamps and quartz-tube mercury vapor or "ultra violet ray" lamps, the latter differing somewhat in construction.

It cannot properly be said that the effect of these lights is the same as that of sunlight, since the character of the light is much different in respect to the relative amounts of light waves of different lengths present.

It is known that individual dyestuffs are affected in different degree at least with light of a given wave length and that for most colors certain rather narrow limits of wave lengths are primarily effective in causing fading. A dye-testing lamp should, therefore, give a light which exactly reproduces sunlight, if absolutely accurate results are

to be obtained. The present dye-fading lamps do not do this.

From measurements recorded by Co-blentz, Long and Kahler in the Bureau of Standards Bulletins 15 and 19 the intensity of radiation from a quartz mercury lamp of light waves shorter in length than infra-red was about the same, at the level of exposure as summer sunlight in Washington. However, about 60 per cent of this radiation was ultra-violet, whereas sunlight contains about 5 per cent ultra-violet light. Furthermore, the distribution of light in the visible spectrum is not the same from the mercury lamp as it is in sunlight. Certain wave lengths are entirely absent and others are present in relatively much less intensity. In this latter respect the arc lamp is somewhat superior, as the distribution of light among the different wave lengths is much more uniform and less discontinuous. With a glass globe about the arc it was found by the above-mentioned investigators that the ultra-violet radiation from a typical violet flame lamp was about 60 per cent of the total radiation of wave lengths shorter than infra-red. Consequently there was little difference in this respect between the two types.

The arc lamps are less expensive at first cost and are less fragile than the mercury lamps. The latter are subject to rapid deterioration with continued usage and are surrounded while in operation by an atmosphere relatively rich in ozone. About five times as much

current is required by the arc lamp as a good mercury lamp giving a corresponding amount of light. However, since the former are mounted vertically, samples can be placed on the entire circumference of a circle about the arc and consequently a much greater number can be simultaneously exposed at an effective distance from the source of light than to mercury light, which must be mounted horizontally.

The usual precautions in the operation of both types of lamps should be observed. Precautions should be taken to provide sufficient circulation of air in order that the fabric may not be affected by the heat developed by the lamps. The lamps should also be well screened in order to protect the observer from the effects of the radiations which are particularly irritating to eyes.

The lamps should be so mounted that all the samples may be exposed at the same distance from the light. The intensity of light varies inversely as the square of the distance from the source, and the bleaching action of light decreased rapidly with decrease in intensity. Hence, very slight variations in distance may lead to unreliable results.

On the other hand, the dye-fading lamps are rapid in action and convenient and in spirit of their limitations can be used to obtain results of considerable comparative value.—*Textile Colorist*.

A motion picture showing a large American dye plant in operation has recently been completed by the Du Pont Company. The film depicts scenes at the company's works at Deepwater Point, N. J. The scenes show, among other things, the matching of colors on textile goods and the dyeing of fabrics on machines, dyeing leather, dyeing paper pulp and making paper. The film consists of two reels and is now being shown at colleges, technical schools and before business bodies.



AMERICAN DYESTUFF REPORTER

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In 2 Sections
Section 1



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The Interdependence of the Dye and Textile Industries

By Charles H. Clark

AMERICAN DYE STUFF REPORTER

A Weekly Publication devoted to

DYE STUFFS, COLORS and ALLIED CHEMICALS

In Two Sections—Section 1

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

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No. 23

IN WHICH WE HAVE NOTHING TO SAY

The Talking Being Done by the Senators—Selected Set-tos from the Knox Amendment Struggle Served Up for Easy Consumption

BY way of completing our record of the Senatorial debate which surrounded the vote to include the Knox dye protection amendment in the Emergency Tariff bill, now a law of the land, we have selected this week a number of statements from those who took part in the controversy and have made some attempt to arrange them so as to secure the effect of continuity wherever possible without sacrificing the principal points made. In this attempt, which was undertaken for the convenience of readers desiring to hear more of the arguments advanced by both sides, we have been only partly successful; nevertheless it will be well, in case reference should be made to this issue in future, to bear in mind that while the "drama" herein unfolds as a single scene, the various "lines," as a matter of fact, were widely scattered over the two legislative days of Monday, May 9, and Wednesday, May 11 (the day the vote was taken); that some of the "replies" actually preceded the words which apparently called them forth; that all of Senator

Simmons' remarks were made *after* the bill had been passed (he having three times tried unsuccessfully to gain the floor prior to the vote); that many of the remarks are lifted bodily from much longer speeches, and, finally, that in some cases where the connection seems closest there really exists an interval of forty-eight hours.

So—don't say we didn't warn you.

In justice to ourselves, however, it is only fair to add that the wording, while frequently shortened by elisions, has not been tampered with. . . . We hold that the Government's punctuation alone should prove this. . . . Nor has the sense been impaired, either. We have not taken advantage of the situation to withhold sentences which would put a different complexion on any of the utterances recorded, so far as we are aware.

Now, then, we will let the Senators have the floor and permit them to indulge in carnage to their hearts' content. Highly strung readers, while cautioned not to hold the book too near their faces, need not become un-

duly alarmed and close it altogether. Though the characters may growl menacingly at each other, you may keep your seats in the calm certainty that we shall have them well under control at all times."

Senator King—"The American consumer has been compelled to submit to the outrageous demand of what I submit the evidence shows is a monopoly. This monopoly seeks to perpetuate its power, to increase its profits, and to hold the consumer of dyestuffs in the United States absolutely at its mercy."

Senator Moses—"Mr. Choate has spent no inconsiderable portion of his time in roaming about the country addressing parlor meetings of ladies in advocacy of national defense to be obtained by giving his clients an absolute monopoly in the dyestuffs market of America."

Senator Hitchcock—"It has been pretty thoroughly estimated by this time that there is in this country a dyestuff monopoly. Two great combinations hold the country in their grip at this time in the manufacture of dyestuffs."

Senator Knox—"In 1914, when the war broke out, there were seven manufacturers of dyes in the United States. In 1920 there were 184, and yet we hear gentlemen cry 'monopoly'; that this industry is in the hands of a few."

Senator Hitchcock—"This great monopoly not only has the American market entirely in its grip, both as to supply and prices, but this monopoly at the present time has a great foreign trade, a trade in dyestuffs which it is maintaining in the face of competition from all over the world."

"This trade is rapidly growing. For the eight months ending with February of the present year this great monopoly of the United States, which is supposed to need an embargo as a protection against the rest of the world, exported \$17,246,484 worth of goods sold to the rest of the world. Do Senators want to put into a law

a provision that this monopoly shall be permitted to continue and fatten on the American people while it is selling its products in competition with German dyestuffs and other dyestuffs in other parts of the world?"

Senator Simmons—"The Senator from Nebraska (Mr. Hitchcock) has said that because there were large exportations of certain characters of dyes that are produced in this country, there was, therefore, a great trust. I do not know myself whether there is any trust with respect to those particular dyes or not; but I do know that long before the act with reference to dyestuffs which was passed during the war there was an investigation into this subject, and it was then developed in that inquiry that there were certain kinds of dyes that had long been produced in this country; that long before that time that particular class of dyes were produced in this country largely in excess of the American demand, and there were and had been for some time heavy exportations of that character of dyes. I presume that that situation exists to-day. But, Mr. President, while before the war we were producing in this country certain kinds of dyes in quantities in excess of our demands, we were making only a very small part of the dye colors which were then and are now used in this country. We were not producing at all by far the greater part of the colors that were in common use in this country; and we were not prepared to produce and never had produced those by-products of the dye industry which were shown to be so essential in times of war for the defense of the country. Germany had an almost absolute monopoly of the production of these colors and these by-products."

"In that situation, upon the recommendation and request of Woodrow Wilson, then President of the United States, we were called upon to act, by adopting the law the operation of which this provision extends for six months. The case presented itself to

us not as a tariff question at all, but as a question of national preparedness and national defense; and without party divisions in this Chamber or in Congress we enacted the legislation which it is now claimed built up a trust which that enactment subsidizes. If we had not enacted that legislation, in my opinion, it is doubtful if we could have won the war.

"It is a mistake to suppose that this provision of the bill changes that law. . . . Not one line or one syllable is stricken out of or added . . . so that, as I regard it and as I think it ought to be regarded, this is a mere extension of a provision necessary to the national defense until we can have reasonable time to develop that industry to the point of making it adequate to supply our demands in case of hostilities."

Senator Hitchcock—"In a bill for which some Democrats have been voting to-day, you propose to erect practically an embargo and say to the

manufacturers of German dyestuffs, 'You cannot sell your dyes to the American people as long as the American manufacturers are manufacturing those dyes,' notwithstanding the fact that those same American manufacturers have been selling their dyes in other parts of the world to the extent of \$17,000,000 during the last eight months."

Senator Knox—"There is something entirely familiar in these lamentations of the Senator from Nebraska about the probability of the German monopoly in the most dangerous munitions that have ever been manufactured being interfered with by this bill. We remember that during the war, when the Germans had a monopoly of munitions and the Allies could not obtain munitions to fight the Huns, the Senator from Nebraska advocated a bill to prevent the people of the United States from shipping munitions to the French and to the English and to the Italians,

who were engaged in a death struggle with Germany for the preservation of civilization."

Senator King—"In my opinion, Democrats can find no justification for supporting a licensing feature in times of peace and an embargo that will operate to swell the earnings of corporations engaged in an industry which now has undisputed control of domestic markets. It is an abandonment, in my opinion, of the traditional policy of the party, and will prove an embarrassment to the Democrats when they come to consider future revenue and tariff measures. There may have been some justification for President Wilson's advocacy of a tariff on dyes a number of years ago, but I respectfully submit that the position of President Wilson taken then does not support a policy calculated to entrench a monopoly in the United States which would oppress and plunder the people. If the Democratic party should join hands with Republicans to enact legislation such as Republicans have enacted in the past, under which trusts and monopolies were developed, it would have no right to ask for the confidence and support of the American people. In my opinion, one of the great issues before the American people is whether or not monopolies and trusts and combines shall rule and control our political as well as our economic life. Never in the history of the Republic have trusts and monopolies been more arrogant, sinister and oppressive than they are at the present time."

Senator Borah—"Mr. President—"

Senator King—"I yield to the Senator."

Senator Borah—"I think we ought to have an agreement that when we discuss the tariff question we shall not refer to either the Republican or Democratic party. The terms signify nothing at all."

Senator Ashurst—"My able and redoubtable friend from Utah (Mr. King) stood his ground, opposed to any duties on dyestuffs. In the case of this provision under title V relating to dyestuffs, some challenge was flung at Democrats for voting for a high duty on dyestuffs. The most eminent low-tariff man the world ever produced, outside of the English low-tariff statesmen, sent a wireless message to Congress from Paris urging a protective wall upon dyestuffs so high that none could come in. The former leader of the Democratic party, Woodrow Wilson, sent the following message to Congress by wireless on May 20, 1919:

"Nevertheless, there are parts of our tariff system which need prompt attention. The experiences of the war have made it plain that in some cases too great reliance on foreign supply is dangerous, and that in determining certain parts of our domestic tariff policy domestic considerations must be borne in mind which are political as well as economic. Among the industries to which special consideration should be given is that of the manufacture of dyestuffs and related chemicals. Our complete dependence upon German supplies before the war made the interruption of trade a cause of exceptional economic disturbance. The close relation between the manufacturer of dyestuffs on the one hand and of explosives and poisonous gases on the

other, moreover, has given the industry an exceptional significance and value. Although the United States will gladly and unhesitatingly join in the program of international disarmament, it will, nevertheless, be a policy of obvious prudence to make certain of the successful maintenance of many strong and well-equipped chemical plants. The German chemical industry, with which we will be brought into competition, was and may well be again a thoroughly knit monopoly capable of exercising a competition of a peculiarly insidious and dangerous kind.'

"Where is there a high-tariff man who ever made a stronger argument than that? Let him stand up if there be one. Did former Senator Aldrich or former Representative Payne ever make a stronger argument for a high protective tariff than did President Wilson when he urged Congress to place a tariff on dyestuffs and its related chemicals? . . .

"The tariff question is a logical question, a business question—which moves *us*. We do not move *it*. This country is going to demand that the tariff question shall no longer be made a political question, because it is a business question only."

Senator King—"By some it is contended that this legislation is necessary as a means of national defense. . . . Mr. President, in my opinion, the facts do not support those who advance this argument, but time does not permit a presentation of the facts relating to this matter."

Senator Knox—"Mr. President, today perhaps the noblest call to man is the dissipation of the possibility of future war, and perhaps one of the strongest arguments that can be put up to Governments is that to avoid war we must disarm. But what profits it, Mr. President, if we shall destroy our battleships, if we shall destroy our arsenals, if we shall cease to cast guns and swords and bayonets, if we leave the world's productive capacity of organic chemistry in the hands of Germany, which enables her to turn out instantly, with the flexibility of her plants, the most deadly weapon that human ingenuity has yet devised? You may sink every German battleship to the most remote cave of the sea, you may reduce to dust her proudest fortresses, you may blow the great Krupp plant to Hades, and you may cast the Big Berthas into plowshares and pruning hooks, but if you leave the dye industry in the possession of Germany she has the world by the throat.

"Mr. President, those of us who take an interest in what has happened during this war, those of us who seek intelligently to understand the causes of the great destruction of this late war, those of us who have visited the hospitals and seen the asphyxiated boys, many of them demented—my God! how can we refuse by our votes to take over to ourselves the ability to do that which they would do? Nations do to each other what the others do to them, but if we are wise we should be sure to get ready to do it first.

(Concluded on page 12.)

AMERICAN DYESTUFF REPORTER

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Pointed solely toward the welfare and growth
of the American Dyestuff Industry. Unbiased
contributions appreciated.

A. P. HOWES, President

LAURANCE T. CLARK, Editor

In Two Sections—Section One

TO TEXTILE TECHNOLOGISTS

Your attention is directed to the editorial page of the Technical Section of this week's REPORTER, where there will be found a heading: "Wanted: A Technical Association of the American Textile Industry." We want you to read carefully what appears under this heading, and afterwards to let us know what your own ideas on the subject may be. That you will have suggestions to offer we take for granted; whether you let them be known or not will depend more or less on your generosity in giving a little spare time in aid of a project which should make for the advancement of the textile industry. We are also going to request that you talk the matter over with at least one friend and ask him to contribute his thoughts as well.

There is no good reason which can be advanced against immediate steps being taken to organize a body of the character outlined, and The REPORTER's request for expressions of opinion is based on your interests, not its own.

A HINT FROM THE HARDWARE FIELD

It may be a somewhat far cry from hardware to dyestuffs, but all the same there is a useful hint or two contained in a letter just sent out to members of the American Hardware Manufacturers' Association accompanying a reprint of the resolutions passed by that organization while in joint convention with the Southern Hardware Jobbers' Association at Atlantic City last month.

Members are informed that:

"The mere passing of these resolutions and their submission to the proper committees and members of the two Houses in Washington will in itself have little effect. . . .

"There is a very general misapprehension as to the attitude of the members of Congress toward suggestions in matters relating to legislation. Your Resolutions Committee has had considerable experience in Washington and has come in contact with a number of committees and individual members of Congress. Without exception, it is our experience that these men are very desirous of obtaining the opinions of large employers and manufacturers who are recognized to have both broad experience and a wide perspective. These men are looking for advice and helpful suggestions. It is the feeling of your Committee that it is the duty of every member to do his share to acquaint his Representatives in Congress of his attitude on these important questions.

"As you are probably aware, there are a number of active organizations in the labor field, in the field of agriculture and many other groups who are constantly bringing pressure, individually and collectively, on Congress, not always from an unprejudiced or unpartisan standpoint.

"In order to create the most favorable impression, it is suggested that each member use his own phraseology in writing his Representatives, and that he select that part of the resolutions which, in his judgment, seems most essential.

"You are strongly urged to write at once to your Representatives while the matter is fresh and the subjects under consideration are active in the minds of all of us."

Really, we don't feel like adding a single word. Substitute other phrases for "in the labor field" and "in the field of agriculture," and the above constitutes a perfect editorial dealing with a matter of great importance to all readers of The REPORTER at this time. It is only a longer way of saying what you already know, that the pen is mightier than the resolution; but it

plainly indicates how well others realize this fact, so often repeated in these columns, and how systematically they take advantage of it.

The Longworth resolution calling for the immediate operation of the provisions of the permanent tariff bill may pass or it may fail. Its outlook has apparently grown much less roseate since last week's issue. If it fails, the dye industry will be subjected to a most upsetting jolt; yet the situation would not necessarily be lost.

But if the Longworth selective embargo provisions of the permanent tariff measure should fail, that would be a wholly different story and an exceedingly sad one, for the industry would then be left indefinitely without any protection worthy the name. Now or never, then, is the time for a personal appeal.

"You are strongly urged to write at once to your Representatives while the matter is fresh and the subjects under consideration are active in the minds of all of us."

GOVERNMENT WANTS CHEMISTS

The United States Civil Service Commission states that there are openings in the Government service for associate chemists at \$2,500 to \$3,600 a year, assistant chemists at \$1,800 to \$2,500 a year, and junior chemists at \$1,200 to \$1,800 a year. Appointees at an annual compensation of \$2,500 or less will also be allowed the increase of \$20 a month granted by Congress.

It is stated in the "Journal of Industrial and Engineering Chemistry" that the openings offer opportunities for those who are qualified in the various specializations of chemistry.

There is also need in a number of Government establishments for laboratory assistants, laboratory aids, and laboratory apprentices of various kinds, requiring training in chemistry, physics, ceramics, textile technology, paper technology, civil mechanical and electrical engineering.

IN WHICH WE HAVE NOTHING TO SAY

(Continued from page 9.)

"I place no importance at all in this discussion upon the economic features of this amendment, and yet perhaps there could be no greater argument made for any American industry than could be made for the protection of the dye industry, when you take into consideration the circumstances under which it came into being. Woodrow Wilson had the vision to see what it meant. Twice has he specifically, in his message to Congress, called attention to the necessity of the building up of this great arm of national defense. . . .

"We hear gentlemen complain of the efforts the dye manufacturers are making to protect their two or three hundred million dollar investment. Mr. President, every time a super-battleship is built in the United States it is paid for to the extent of forty or fifty million dollars out of the pockets of the American taxpayers. Every time a dye plant is constructed which costs forty or fifty million dollars it is built at the expense of private individuals, who, because of the peace-time uses of their product, can afford to construct those plants, which, as I have said, are almost instantaneously convertible into munition plants. Yet your battleship in five or six years is obsolete and your investment is gone; but your dye plant, if the country is progressive, will become greater and greater and more efficient, not only for the purposes of peace but for the purposes of war.

"We hear complaints that these in-

stitutions are great, enormously capitalized, and make large profits. Mr. President, in this day of grace, when great things are being done in the world, it requires great instrumentalities to accomplish them. You cannot equip an army to fight 5,000,000 Huns in the blacksmith shops at the cross-roads, and you cannot finance it at the little national banks in the villages throughout the country. You have to take a view of this situation, Mr. President, that is becoming the size of our country, the dignity of our statesmanship, and the wisdom and patriotism of the men who sit here and represent the American people."

BROWN WOOLEN MILLS, RE-BUILDING, TO USE NEIGHBORING PLANT

It has been announced that the Brown Woolen Mills, Ltd., whose plant at Kingsville, Ontario, was completely destroyed by fire on May 14, have made arrangements whereby their business will be carried on for the present at the plant of the Brook Woolen Company, Ltd., Simcoe, in the same Province.

George E. Templeton, superintendent of dyeing for the Brown Woolen Mills, will act in a similar capacity for the products of both mills while the work of rebuilding the burned structures is going forward.

NATIONAL ADDS SUPERCHROME YELLOW GN

"National" Superchrome Yellow GN is the most recent addition to the chrome colors of the National Aniline & Chemical Company, Inc.

"National" Superchrome Yellow GN possesses very good fastness to light, fulling and potting, and can be dyed upon a chrome bottom, aftertreated, or by the metachrome process.

The very excellent solubility and level dyeing property of this type render it especially valuable for machine dyeing and also for the production of mode and compound shades, for the dyeing of woolen and worsted goods in all stages of manufacture.

In addition to these properties, "National" Superchrome Yellow GN is ex-

cellently suited for the dyeing of piece goods containing silk or cotton effects which are not stained.

This product is also well adapted for the printing of calico and for vigoureux printing.

DU PONT IN FIELD WITH SAFRANINE T EXTRA

E. I. du Pont de Nemours & Co. announce a bright bluish shade of high concentration and solubility, called Du Pont Safranine T Extra. The dye is used for printing on cotton and dyeing cotton. It is suitable for dyeing pure silk and tin weighted silk, for which purpose it gives results of very good fastness to washing, which may be made still faster by an aftertreatment with tannic acid. The color also finds use extensively for dyeing paper stock, for wall paper and lithographic lakes and on vegetable and combination tanned leathers. The use for Safranine is wide, it being employed considerably for dyeing wood chip, straw, artificial silk and in the manufacture of inks and spirit lacquers.

OAKITE PRODUCTS SHOWN AT TEXTILE SHOW

The Oakley Chemical Company had an interesting and attractive exhibit in its booth at the recent textile show of the National Association of Hosiery and Underwear Manufacturers, in Philadelphia. Samples were shown of many kinds of materials which had been kier-boiled, soaped out, scoured or cleaned with the aid of Oakite.

Special prominence was given to samples of cotton hosiery and underwear tubing which had been kier-boiled with the aid of Oakite. Attention was called to the softness and whiteness of the samples, due to the use of Oakite in the cleansing processes.

A staff of Oakite chemists and textile men were in attendance to explain the use of Oakite materials. An excellent booklet, "Oakite in Textile Mills," which may be obtained by writing to the Oakley Chemical Com-

pany, 22 Thames Street, New York City, was distributed by the Oakite men in their booth.

SENIORS OF N. C. TEXTILE SCHOOL ENTERTAINED

The graduating class of the Textile Department, North Carolina State College, which is the Textile School of North Carolina, accompanied by the members of the textile department faculty, were the guests recently of the Carolina Cotton & Woolen Mills Company, Spray, N. C. This company is owned by Marshall Field & Co., Chicago, who operate a number of mills in North Carolina and Virginia on different kinds of fabrics.

The class was divided into two sections, each visiting the mills two days.

The students were met at the Reidsville Station by L. W. Clark, general manager of the company, and were carried in automobiles to Spray

to spend the night. In the morning a specially planned itinerary was very carefully carried out. At Draper the blankets and sheeting mills were visited. These mills manufacture the celebrated Wearwell wool-finish blankets and the Wearwell sheeting. At Spray the Rhode Island Mill, Spray Woolen Mill, Nantucket Mill, Lily Mill, American Finishing Plant and Spray Bleachery were the mills visited. The woolen mill manufactures the Wearwell blankets, both all wool and wool mixed; the other mills manufacture cotton blankets, sheetings, gingham, outing and other fabrics.

The mills at Leaksville, which comprise the bedspread mill, Athena Spinning Mill and finishing plant, were inspected, after which the students were conveyed by autos to the Fieldale Mills, Fieldale, Va. This is a very beautiful drive, as Fieldale is located in the midst of the Blue Ridge Mountains. It is a new town and mill, and manufactures a fine grade of huck and Turkish towels, cotton damask, tablecloth and napkins.

The visit to the mills was especially valuable to the students, as they were enabled to get in touch with the men in charge of the various plants. The students were divided in groups and personally conducted through the mills by Mr. Clark, assisted by the superintendents and overseers of the various mills.

THE INTERDEPENDENCE OF THE DYE AND TEXTILE INDUSTRIES

Being the Opening Portions of the Address
Delivered Before the National Association of Cotton Manufacturers'
Convention Held in Boston

By Charles H. Clark

Editor, "Textile World"

Proof of the interdependence of the textile and dye-making industries that would be accepted as competent and conclusive by any judge or jury is available in the published testimony of leading American, British and French chemists and manufacturers. This testimony dates from the first year of the World War, when the world source of synthetic dye supply in Germany was cut off and when the great textile industry was threatened with catastrophe.

The testimony of these authorities is supplemented by the voluminous reports of Government and trade investigating commissions, which unanimously advanced the opinion that the dye-making machinery is essential to the existence of a large part of the textile industry, and which urged prompt Government support or protection for an adequate dye-making industry in each menaced country. Great Britain and France indorsed the accuracy of these views by granting substantial subsidies for the development of synthetic dye-making plants, and this country by protective legislation stimulated private enterprises in its efforts to meet the emergency.

Because the catastrophe that then threatened the textile industry was averted by the phenomenally rapid manner in which production of the most largely used synthetic dyes was developed, by the increased use of many natural dyes, by war economies in the textile expedients, its disastrous nature has never been fully realized by the textile trade or by consumers.

If the supply of synthetic dyes had been cut off completely for a year or two, and during that time the consuming demand had remained normal in

character and volume, it is reasonable to assume that manufacturers, distributors and consumers would not enjoy a more accurate conception of what brilliant, fast, cheap and rapid-dyeing colors mean to the textile industry and to mankind. To attempt to picture such a situation would be difficult and being largely imaginary and theoretical it could not be convincing. It is possible that the same objective and a better understanding of the intimate interdependence of the textile and dye-making industries may be obtained from a brief review of their early history and later development. It may at least afford a clearer perspective of their present complex relationship and of the absolute dependence of the major part of the textile industry upon color.

PRE-HISTORIC USES OF COLOR

The birds of the air and beasts of the field were created with color and with the intuitive intelligence to make use of it for camouflage and sex attraction. Man's first use of color was for the same purposes and feathers and skins were his first mediums. The dye industry had its beginning when the stains of vegetable juices on his hands taught man the elementary use of natural dyestuffs. While it is highly improbable that the cave man indulged in systematic research work for the discovery of a useful range of colors, their incentive for the development of camouflaging colors, at least, was relatively as great as that which stimulates modern

chemists to produce a new vat dye or a more deadly poison gas.

The most ancient Egyptian and Aztec fabrics give evidence of exceptional appreciation and knowledge of color and natural dyestuffs. Natural dyes as brilliant and fast as any produced by modern chemists were used by both prehistoric races. More remarkable still is the fact that the ancient Egyptians were masters of the use of mordants in the fixing of fast colors upon cotton and linen with vegetable dyes, as recorded by Pliny the elder, and that Indians in North Colombia contemporaneous with the Aztecs used small rolls for printing designs on fabrics as well as upon their flesh.

EARLIEST BIBLICAL REFERENCES TO DYES AND FABRICS

The earliest references in the Bible to color and fabrics makes it very plain that the former were received most highly and that certain colors had a deep religious significance. Because Israel loved Joseph more than all his children "he made him a coat of many colors." Genesis, 37th chapter, third verse.

Blue, purple, scarlet and white were the four colors of the Mosaic cultus and collectively as fires they symbolized deity. That blue, purple and scarlet were valued almost as highly as the precious metals is proved by the command of Moses to the Israelites regarding the offerings to be made by the latter for the construction of the taber-

nacle: "Gold and silver and brass and blue and purple and scarlet and fine linens and goats' hair and rams' skins dyed red." Exodus, 25th chapter, fourth and fifth verses. The same idea is emphasized again in the following: "And thou shalt make a veil of blue and purple and scarlet and fine twisted linens of cunning work." Exodus, 26th chapter, thirty-first verse.

Philo and Josephus associate the Mosaic colors with the elements thus. The sea, purple; fire, scarlet; air, blue; earth, white. Certain of the religious and caste, or social, significance of color that came to us out of pre-historic times have been preserved with little variation until to-day; purple, for instance, has always been the badge of royalty. Caste distinctions in India, China, and other countries of the Orient have their distinguishing colors, and woe betide the exporter who does not take cognizance of these distinctions when catering to trade in those countries. Colors and designs as well must be carefully studied when catering to Asiatic and African countries. The commercial impotence of blue in the Chinese trade may be visualized when it is known that 60 per cent of the world production of natural and synthetic indigo is used in China.

Black, being the negation of all colors, has symbolized death from pre-historic times, and continues to be so used. Red has been a much abused color, signifying at various times in the world's history, fire, war and radicalism. Its ancient symbolic use for fire finds a modern counterpart in the red flannel shirt; from pre-historic times the bull has insisted that red typifies war, and the antipathy of the bull is counterbalanced by the predilection of the anarchist for red.

The Semitic scale of colors fails to differentiate between blue and green, apparently indicating that sea, grass and sky looked the same to the Hebrews, and that they were color blind to this extent. They had no distinct word for yellow, and their indifference to that color may account for the success that has always attended their efforts to corner the world's gold supply.

ART OF DYEING EXISTING BEFORE TEXTILES

There is unquestionable pre-historic evidence that the use of vegetable juices and mineral pigments for coloring the human skin, and the hides and bark used for clothing, antedated by a long period the spinning and weaving of vegetable and animal fibers. From the use of solid stains it was but a step to the development of crude designs, and from the gradual standardization of these designs came the hieroglyphics that were the first efforts of an awakening human intelligence to give permanent expression to its ideas. Long before the production of the first crude fabrics women from reeds and grasses the art of coloring and designing must have been developed to a relatively high degree for those times; it is not strange, therefore, that the first yarns and the first woven textiles should have been stained and painted with the colors and designs that had been developed previously on less suitable mediums.

In those earliest days of the textile industry it was not a case of interdependence between it and the dye-making industry, but solely one of almost complete dependence upon the latter. So slow and laborious were all processes of producing textiles that only the rich could afford them. Like the more modern tapestries, altar pieces and state and ecclesiastical robes, they were objects of art, and, in color and design, reproduced and interpreted the superstitions, as well as the religious, and social ideas of the times and peoples.

THE UTILITY OF COLOR IN TEXTILES

In only one of the most important uses of color in textiles do modern manufacturers rise superior to the ancient; it was known and utilized by the latter but was never so zealously sought after or commercialized as to-day; this is the utilization of color and color combinations in fabrics for the purpose of camouflaging dirt. The principal modern use of color in men's, workingmen's, and to a large extent in women's

cloth—is to render dust and dirt less visible. It is the badge of a human race consecrated to the toil, dirt and dust of urban life, of industry, of the railroad, the automobile and the aeroplane with their noise, dirt and grease. Only at our play may we don the light and bright colors of a careful existence. In the dawning electrical or radium age, when the dirt, dust and grease of industry, rapid transportation, and urban life shall have been eliminated, earthly colored clothing may be dispensed with and brighter and more artistic colors substituted.

THE SYNTHETIC DYESTUFF ERA

Until 1856 when Perkin discovered aniline violet and laid the foundation of the coal-tar dyestuff industry, the world was dependent for its colors upon practically the same vegetable and mineral dyes that had been employed in Biblical times. For hundreds of years little important progress had been made in the development of new coloring matters for textile fabrics, and, although there had been marked progress in the application of these dyes to textiles since the latter industry had been organized on a factory basis, the processes were usually laborious, the expense of dyeing relatively large, and with only a few exceptions, it was impossible to produce fast shades on vegetable fibers. At that time there was no literature on the art of dyeing worthy of the name; it was a secret art as closely guarded as that of any of the medieval guilds. The secret methods were handed down from father

to son from generation to generation, and, since the dyers usually controlled the preparation as well as the application of dyes, it is not surprising that research and progress should have been discouraged.

(To be concluded.)

Dye-a-Grams

It takes more than prohibition to keep a determined man from being his own worst enemy.

—o—

Seldom do we live long enough to pay in full for all the mistakes we made when we knew it all.

—o—

Harding Blue is becoming almost as popular as the Harding Plum-color!

—o—

Next year we will have to pay an income tax on the income tax we paid last year—some system!

—o—

The girl who used to be classed as a "tomboy" is now known as our "athletic daughter."

—o—

It isn't always the dyer who has difficulty in getting fast colors. Judging by the cover on a recent issue of *The Reporter*, we'd say offhand that the printers have their troubles too!

—o—

But then, we'll bet there are some people mean enough to blame this on American dyes!

Furnishing binders and loose-leaf description data of types is a fine idea—but it doesn't mean anything if it isn't kept up to date!

—o—

Does anyone know a dyestuff house that goes under the nom de plume of E. I. du Pont Dinty Moore Company?

—o—

It's a long name that has no turning.

—o—

Now that Canada has gone "dry," possibly there will not be so many dye salesmen anxious to make the trip as formerly!

G. E. T.

DYEING ARTIFICIAL SILK

Artificial silks are often found to have varying affinities for coloring matters, and, when dyed in the same bath, this leads to irregularity of shade and most unsatisfactory results. To obviate this is the object of a late English invention, treating for this purpose the silk first with tannin material, and then with the dyestuff immediately after the tannin treatment and prior to treatment with metallic salt. The treatment with metallic salt is not necessary, but is advisable in order to insure fastness to light and washing.

In carrying out the process, the hanks of yarn or fabric lengths are first wetted out or bleached, and then treated in vessels containing tannic acid. This bath may be either cold or hot, and of varying strengths, and at different periods of time according to the effect desired as regards penetration and depth of shade. Excess of liquid is removed

by draining, squeezing, hydro extracting, or by rinsing with water. The hanks or fabrics are then dyed in a solution of a basic dye, and the bath may be neutral or acid.

After dyeing, the goods may be passed through a solution of tartar emetic or other metallic salt to increase the fastness of the dye to light and washing.

The three following baths are suggested as examples which give good results:

Bath I—100 parts water, 1 part tannic acid, temperature, 65 deg. Fahr. Time 20 minutes.

Bath II—120 parts water, $\frac{1}{2}$ part methylene blue dissolved in the usual way, 1 part acetic acid, temperature, 60 deg. Fahr. Time, 25 minutes.

Bath III—150 parts water, 1 part tartar emetic, temperature, 70 deg. Fahr. Time, 15 minutes.

NOTES OF THE TRADE

N. S. Wilson & Sons, Inc., Boston, Mass., have been incorporated with a capital of \$75,000 to deal in dyestuffs and affiliated products. Norris S. Wilson is president, and Marshall W. Leavitt, 70 Kilby Street, treasurer.

Flavoring extract manufacturers from all parts of the United States will meet in St. Louis on June 13-15 for their annual national convention. The Association has a membership of more than 500 and it is expected that at least 200 will attend the convention.

Joseph H. Ridings, overseer of finishing for the Phoenix Woolen Company, Stafford, Conn., has severed his connections with that company to accept a similar position with the Bay State Mills (American Woolen Company), Lowell, Mass.

The Blythe Chemical Company, Brooklyn, N. Y., has been incorporated with a capital of \$5,000 to manufacture chemicals, dyestuffs, etc. The incorporators are M. T. Branscomb, A. Falk and K. Hart. D. Geiger, 286 Fifth Avenue, New York, is representative.



AMERICAN DYESTUFF REPORTER

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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

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No. 24

ADVICE FROM PHILADELPHIA

"Textile Colorist" Logicians Say Dye Manufacturers Must Advocate Licensing for All War Industries—Surprising Indifference to Facts Displayed in Editorial Comment

HERE is another excellent example of the offensively magisterial manner in which, with ready casuistry, those who look with disfavor upon the provisions of the Longworth bill seek to saddle its supporters with the stigma of attempting to bring about a complete revolution in the policies of protection which have hitherto prevailed in this country.

Says the "Textile Colorist" in its June issue:

"One of the chief arguments advanced by the advocates of the bill is that the dyestuff industry is an essential one in time of war and, hence, must be protected by extraordinary means in time of peace. The importance of this industry and of the chemical industry in general as a war factor cannot be questioned.

"Is not the textile industry, the steel industry, the industries relating to the preparation of food products and dozens of other industries equally important in time of war?

"Of what avail are explosives and death fumes if we cannot supply our

soldiers with suitable clothing, effective guns and sufficient and proper food?

"Is not practically every industry of vital importance in the proper and effective conduction of war?

"The dyestuff manufacturers have considered it necessary that the importance of their industry as a key industry demands a complete change in the tariff policies of the Government by placing an absolute embargo upon those of their products that are made in this country.

"It is logical to suppose that other American industries will demand the same protection for their products that have been granted to dyestuffs—in fact, that eventually every industry will make this demand, thus placing a wall of absolute embargo around every industry and preventing the importation of any product made in this country at a price equal to the foreign price. Free trade, high tariff and tariff for revenue only will thus be policies of the past.

"The domestic manufacturers of dyestuffs having advocated this policy for themselves, must advocate the same

policy for every other industry that can show its usefulness in times of war."

What a quaintly original notion! There, we submit, is an Idea indeed, an Idea for a 190-lb. intellect to grapple with and assimilate—if possible. As Mr. Kipling's *Mulvaney* might say: "'Tis a Solomon av an Idea, is that." Because our dye makers advocate this policy for dyes, they *must* advocate it for all other products usefurl for war!

We like that. There is something so free and untrammelled about the reasoning, such a lofty indifference to facts, as to make it almost sublime. We admire the way in which it soars grandly above the sordid limitations of logic which hamper ordinary seekers after truth, who are obliged to pick their way slowly and painfully, a step at a time; and for the fearless way in which it leaps over any and all obstacles in order to get at the coveted conclusion.

Unfortunately for the "Textile Colorist" logicians, however, it isn't quite as good as it may look to them. The only request of the dye manufacturers is that the industry be given just enough protection to protect it; no more, no less. And if called upon to express their opinion concerning the policy to be adopted toward all other American industries, they would tell you that each, likewise, should be given enough to protect it. It is the result of circumstances over which they have no control that "enough" happens to mean more protection in the case of the dye industry than is necessary for a majority of the others. It is not claimed that the dye industry must be "protected by extraordinary means in time of peace" because it is an essential one in time of war. Granted that it *is* essential for war, it asks protection by more than ordinary means because it is up against more than ordinary competition.

It asks only that the means be adequate to cope with that competition, for a limited period, and the contention that the ordinary means of protection employed in this country would not avail in the case of the dye industry has

never been disproved. The Cartel is perfectly capable of making the ordinary high tariff look like a free trade measure.

Hence, it would not be logical for other American industries to demand the same protection for their products that has been granted to dyestuffs, nor is it logical to suppose that they would do so, as the "Textile Colorist" reasoners assert. Moreover, to compare the dye industry with the steel, textile and food products industries in strength of position and every-day necessity, is absurd. There is no fear that the art of making battleships, rifles, clothing and food products will die out among us. The Government is a constant purchaser of the former things, experiments with them for active military service, and has a sharp eye on the sources of future supply, while the enormous domestic demand for the peace-time articles is at the very least sufficient to insure the presence here of adequate plant facilities to meet the demands of war. And even of the latter the Government buys for the army and navy, so that there are specifications ready if needed.

The clothing and food for a new army is much less of a problem here than the preparation of that army. The equipment can be made ready more speedily than the men themselves can be gathered and trained. A competent tailor, for instance, practises his trade year in and year out, and it is no trick at all for him to make a uniform correctly according to Government specifications the first time he tries. The chief point of difference between these industries and the dye industry lies in the fact that whereas the former are essential both in war and in peace, and hence go forward continuously, the latter is not an essential peace industry in this country while the German works exist.

The dye industry could drop out of sight completely in the United States, and during the shrinking process its place could be filled by the German industry with hardly a perceptible break in the supply. Its going would cause

no inconvenience to consumers of dyes nor to the one hundred and six millions of us who wear dyed clothing. In short, it would never be missed until war came upon us, when the United States would suddenly awake to find itself lacking one of the most essential of essential war industries.

If one of these other industries showed signs of succumbing to a foreign attack, there would soon be agitation up one side of the country and down the other for sufficient protection to save it. A revised tariff schedule would do this in the case of any one of them, but would fail in the case of the dye industry. With Germany ready to supply the demands of consumers, the dye industry, considered alone, does not possess sufficient economic importance to cause any great general excitement over whether it is preserved or not. It is only when one realizes the tremendous economic and military significance of the coal-tar chemical industries en masse that its true role becomes apparent.

With the dye industry gone, consumers would then be wholly dependent upon the decisions of a giant German trust instead of the more than 200 competing American dye manufacturers. Let those who shriek "monopoly" bear this in mind. Only a selective embargo such as the one planned in the forthcoming Longworth provision of the permanent tariff bill could restore it—and meanwhile the country would be unprepared for war. Only such a measure, applied temporarily, can raise

it from the unstable position which it holds to-day—by virtue of continued war legislation—to self-reliance and the ability to compete with Germany. Most consumers agree that a tariff is insufficient, and that is why the dye industry claims the temporary right to unusual protection; and its representatives, along with the great majority of our citizens, would advocate even stronger protection for any other essential war or peace industry should the latter reach a point where conditions demanded it. But until such a remote contingency arises, no; and as for being obliged to declare themselves in favor of the wholesale alteration of our protective policies—or even of the adoption of unusual protection for the dye industry for more than a limited period—well, the absurdity of such "reasoning" should be patent enough.

It is hardly likely that these gifted gentlemen expect by the publication of such piddling nonsense to force the selective embargo advocates into the position which they define. Rather would it seem as though they hoped, perhaps, by thus making it appear as though the dye people were about to launch revolutionary measures threatening the whole tariff structure, to bring down upon the industry the just suspicion and opposition of all sane business men. For surely the outrageous and unsound doctrines which they declare the industry should follow are little short of madness.

Half-baked reasoning it is, sure enough; and since it is inconceivable

that the perpetrators are not aware of the facts set forth above, it has more than a little the appearance of having been intentionally pulled from the cerebral oven before it was "done."

It is more than agreed that the dye industry must do everything within its power to facilitate the importation of needed colors with no delay, and to make easy the way of the consumer even at the cost of frequent sacrifices. This is a plain duty which rests upon the dye industry. When the Longworth selective embargo actually goes into effect, the lists of conditionally importable colors should be in such shape that applications for permission to import can be granted or refused *instantly*, no "licenses" being required. There should be no more red tape about the proceeding than a telephone call to a broker ordering the purchase of stock. Refusal to grant permission to import must mean only one thing, namely, that the needed color can be obtained here in the United States on reasonable terms as to price, quality and delivery; and the administrators of the law should be ready with the names of those who can supply it. In all cases of doubt, there should be no hitch; the consumer should be given the benefit of it and allowed to import. The few errors that might be made and permission given to bring in colors already available here could do no possible harm to the dye industry as a whole, and it should be well worth the loss of such business in order to make the law operate to the satisfaction of all.

That is the position of the American dye industry on both questions recently raised by its critics. It has been able to demonstrate that its claim to temporary, unusual protection is a sound one, and it believes that only by close co-operation with the consumer can this claim be granted without bringing needless hardships upon both.

G. Gunby Jordan has been elected president of the Perkins Hosiery Mills, Columbus, Ga., to succeed the late C. L. Perkins. C. J. Tune was named to membership on the board of directors at the same meeting.

FOREIGN DYES LICENSED BY W. T. B. FOR MAY IMPORT

Following is a complete list giving the types and quantities of dyestuffs for the importation of which into the United States licenses were granted by the War Trade Board during May. This tabulation is being issued by the American Dyes Institute, and it is announced that anyone interested in the manufacture of dyestuffs who has not received a copy may obtain one by application to that organization's headquarters, 320 Broadway, New York.

[Note (by request of the War Trade Board)—Licenses shown by this list to have been issued for particular commodities must not be considered as a precedent or assurance that favorable action will be taken on future applications for similar commodities. The War Trade Board Section announced in special cases that it is its practice to consider any special evidence that may be submitted by manufacturing consumers of dyestuffs tending to prove that the American commodity, while satisfactory in general or for some lines, will not meet the requirements as to quality or adaptability for particular manufacturing purposes.]

It should be noted that, in addition to the colors listed, there were items licensed for import from England and France, as follows:

Designation of Dye	England (lbs.)
Aliz. Blue SCB 20% Paste.....	2,691
Aliz. Blue Soluble Pdr. 100%.....	1,220
Aliz. Bordeaux BA 20%.....	1,700
Aliz. Green S 15%.....	500
Aliz. Green X 10%.....	1,000
Aliz. Orange 20% Paste.....	500
Aliz. Red YCA	1,500
Amaranth	30
Coomassie Navy Blue 2RNX.....	5,000
Curcuphenine	1,000
Durasol Acid Blue B.....	2,500
Indigo Disul. Acid.....	30
Naphthol Yellow S.....	80
Orange I	30
Oxyphenine GG Conc.....	2,200
Oxyphenine R	1,100
Ponceau 4R	50

England (lbs.)		Switzer- land (lbs.)	
Designation of Dye		Germany (lbs.)	
Tartrazine N	50		
Thional Brown R.....	4,000		
Total	25,181		
France (lbs.)		Switzer- land (lbs.)	
Designation of Dye		Germany (lbs.)	
Acid Green J 80.....	110		
Ammoniacal Cochineal	110		
Azo Naphthol Red J.....	110		
Croceine Orange	110		
Cyanol Blue	110		
French Red	110		
Malta Gray B.....	110		
Malta Gray J.....	1,870		
Methyl Lyons Blue.....	(?)		
Naphthaline Black AB.....	25		
Paris Violet 2B.....	110		
Paris Violet 4B.....	110		
Paris Violet 2R.....	110		
Paris Violet 4R.....	110		
Paris Violet 300 XE.....	110		
Rosolane	135		
Total	3,350		
Germany (lbs.)		Switzer- land (lbs.)	
Designation of Dye		Germany (lbs.)	
Acid Aliz. Gray G.....	250		
Acid Milling Black B.....	..	9,460	
Acid Milling Red G Conc..	..	75	
Acid Rhodamine S .....	..	880	
Acid Violet 4BNS .....	..	3,300	
Acid Wool Blue RL.....	..	21,300	
Agalma Black 10BX.....	25	..	
Algol Blue 3G	2,000	..	
Algol Brilliant Orange FR.	..	600	
Algol Brilliant Violet 2B..	15	..	
Algol Bril. Violet R Pdr...	50	..	
Algol Brown G	1,000	..	
Algol Brown R	1,000	..	
Algol Brown R Paste.....	3,500	..	
Algol Corinth R Pdr.....	20	..	
Algol Red FF Ex. Paste...	500	..	
Algol Red 5G Pdr.....	20	..	
Alizarine Black B	1,100	..	
Alizarine Black 3B	491	..	
Aliz. Blue Black B	250	..	
Aliz. Blue Black BT	5	..	
Aliz. Blue JR	25	..	
Aliz. Blue S Subst. ....	..	480	
Aliz. Blue SAP	1,050	220	
Aliz. Blue SAWSA	600	..	
Aliz. Blue SKY	1,080	..	
Aliz. Blue SKY Pdr.	300	..	
Aliz. Brilliant Green G....	75	..	
Aliz. Cyanine Green Ex. ...	500	..	
Aliz. Cyanine Green CG Ex.	1,000	..	
Aliz. Cyanine Green G Ex..	3,500	..	
Aliz. Cyanole SR	100	..	
Aliz. Emeraldol G	600	..	
Aliz. Green CG Ex.	210	..	
Aliz. Orange R	100	..	
Aliz. Red IWS	1,000	..	
Aliz. Red S Pdr.....	500	..	
Aliz. Red W Pdr.....	1,000	..	
Aliz. Rubinol GW	110	..	
Aliz. Rubinol R	800	..	
Aliz. Rubinoles R Pdr.....	200	..	
Aliz. Saphirole	500	..	
Aliz. Saphirole B	100	..	
Aliz. Saphirole SAWAS ...	1,000	..	
Aliz. Saphirole SAWSA ...	1,000	..	
Aliz. Saphirole SE	3,550	..	
Aliz. Sky Blue B	50	..	
Alizarine SX	50	..	
Aliz. Toner Crushed Z.....	500	..	
Alpha Naphthol	2,000	..	
Amido Red BL.....	100	..	
Anthracene Blue SWR Pdr.	200	..	
Anthracene Blue WB Paste	2,000	..	
Anthracene Blue WGG Pst.	2,000	..	
Anthracene Brown SW ...	1,000	..	

(Continued on page 12.)

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Pointed solely toward the welfare and growth
 of the American Dyestuff Industry. Unbiased
 contributions appreciated.

A. P. HOWES, President
 LAURANCE T. CLARK, Editor

TIME FOR ANOTHER PROTEST

You may read in the newspapers from time to time that the Allies are periodically sending notes to Germany demanding that the disarmament provisions of the Peace Treaty be complied with, and fixing dates for the reduction of the German army to the prescribed 100,000. Superfluous munitions and unauthorized fortress equipment are required to be given up, as well as all arms in possession of civilians. The end of the present month has been fixed as the date for complete disarmament as defined by the Treaty.

But the German dye industry is allowed to go on, principally because the Allies are not so well off for an immediate supply as is even the United States, where the industry is in anything but an adequately strong position. And while Germany retains her dye works, she can never be disarmed in the true meaning of the word, for she holds by virtue of them the ability to make munitions of the most modern and deadly character.

There is no reason why Germany should be feared on that account, however, if other nations are equipped with dye industries also; it is only the nation without one which would fall easy prey to another so equipped. But there's the rub! England suffers the German industry to flourish, although aware of its military significance, because England has wisely passed a law which enables her to buy what she wants from the German industry, yet prevents it from interfering in any way with the growth of her own. France, you may

be sure, is also looking after the dye question, and so is every nation big enough to be ranked as a world power except the United States. The facts are plain enough for our legislators to see, yet we foolishly dally with the legislation which would assure our position. We behold Germany, our erstwhile enemy, still supreme in the dye field, and we behold all other possible rivals providing themselves with laws to take care of their coal-tar chemical industries. What are we going to do about it—allow politics to prevent this necessary action until it is too late?

View it as you will, the question of adequate dye protection has drifted right back to the position which it occupied before, that of a political shuttle. It looked for a time as though our legislators had taken a brace and were about to do something; but parties, apparently, must come first and the safety and well-being of the country afterward—if there is any time left. The merits of a cause appear to have least of all to do with its chances of success in the Congressional proving ground; the only thing which seems to matter is whether Senator So-and-So can or cannot swap his vote on it for another vote on pet legislation of his own. The country must twiddle its thumbs and wonder where it is going to get off while personal spite and party jealousies determine the fate of necessary legislation. If Congressman Corncob's rheumatism isn't bothering him, so that he will be in a good humor; if the permission of Congressman Battle-Axe can be obtained, and if the Washington baseball team's batting average holds up and the Sub-committee of the Committee on Pencils and Paperweights gets back from the game early enough, the measure for dye protection has a chance of passing. No wonder the Cartel laughs secretly and Dr. Duisberg makes more speeches!

We had never thought to say it again, but the country has had more than enough of time wasting. Although on the surface things seem to be progressing, it looks as though Congress cannot get over viewing questions of national safety as political issues, and ow-

ing to this Mr. Longworth is going to have the hardest kind of a fight on his hands before all's said and done.

There are many ways in which you can help him, but none is more effective than your written support of his measure. The time for watchful waiting is again past, and the time for another protest is here.

WAR DEPT. OFFERS MANY INDUCEMENTS FOR MILITARY TRAINING

Thirty days' vacation with all expenses paid, good food, outer clothing furnished, transportation to one of the best little towns in New York State, where outdoor life will prevail, and where swimming, shooting and physical work will be featured, and where plenty of opportunity for sports, entertainment and sight-seeing, including trips across the Canadian border, will be given.

Doesn't the idea appeal to you? The U. S. War Department, which is re-

viving the Plattsburg training camp, is behind this idea, and is not going to demand anything from you in return except that you complete the course. At the end of the thirty days a certificate will be given every member of the camp, and this, if he so decides for himself, will give him the entree to that corps d'elite which will be formed some time in the near future under the name of the Organized Reserves, and which will include the new 77th and 78th Division, as natural heirs to the splendid war-time outfits, and the brand-new 98th Division that will be formed in the Second Corps Area, in addition to the first two.

The camp is to be held at Plattsburg, and is to be modeled on the lines of the Citizens' Military Training Camps that were held there in 1915 and 1916, and which had such a good effect on the whole country, making many things possible when we actually became engaged in the war. The site of the camp is just outside the town of Plattsburg, on the shores of Lake Champlain,

where swimming is always possible. The men at the camp will be housed in tents, and will be drilled in the ordinary recruit drill of the army. Much target practice will be held, and each man will be given every opportunity to make good over the rifle range. Marches through the surrounding country are also planned, and no prettier country could be found for a hike.

Applications for the camp may be made at any of the branches of the Citizens' Military Training Camps Association; at any army post, or to any army officer; to any navy or marine recruiting station; or direct to Major Harvey H. Fletcher, recruiting adjutant, headquarters, Second Corps Area, Governors Island, N. Y. Candidates who have had no military training are desired, but others will be considered.

W. T. B. MAY EXPORTS

(Continued from page 9.)

Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)
Anthracene Chromate		
Brown EB	7,000	..
Anthracene Direct Green R	100	..
Anthraflavone GC Paste....	585	..
Anthraquinone Green GNO.	250	..
Anthraquinone Green		
GXNO	200	..
Anthraquinone Violet	5	..
Artificial Silk Black Conc..	..	1,210
Artificial Silk Black G....	300	..
Auramine OO .....	..	8,800
Azo Acid Blue B.....	..	1,000
Azo Carmine BX	100	..
Azo Rhodine 6B.....	500	1,000
Benzo Fast Black L	600	..
Benzo Fast Blue 4GL	500	..
Benzo Fast Bordeaux 6BL..	200	..
Benzo Fast Blue 4GL	100	..
Benzo Fast Brown RL	200	..
Benzo Fast Heliotrope 5RH	100	..
Benzo Fast Red 8BL	984	..
Benzo Fast Rubine BL	100	..
Benzo Fast Yellow RL	100	..
Benzyi Violet 5BN.....	..	660
Black Base S.....	30	..
Blue Lake	1,100	..
Bluish Alizarine	6,000	..
Brilliant Acid Blue EC.....	300	..
Brilliant Benzo Green B... ..	100	..
Brilliant Benzo Violet B... ..	150	..
Brilliant Benzo Violet 2R..	150	..

Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)
Brilliant Bronze Red B....	200	..
Brilliant Congo R .....	..	500
Brilliant Delphine Blue BS .....	..	1,100
Brilliant Indigo B	4,000	..
Brilliant Indigo BB Paste..	550	..
Brilliant Lake BB	220	..
Brilliant Milling Blue B....	250	..
Brilliant Milling Blue R....	50	..
Brilliant Phosphine 5G		
Conc. ....	..	440
Brilliant Pure Yellow 6G		
Ex.	50	..
Brilliant Sulfon Red B....	500	..
Chinoline Yellow .....	..	1,650
Chinoline Yellow KT Ex....	1,100	..
Chinoline Yellow N Ex....	1,000	..
Chloramine Brown G	500	..
Chloramine Red B .....	..	500
Chloramine Red 8BS	2,600	..
Chlorantine Fast Bordeaux		
2BL .....	..	1,210
Chlorantine Fast Red 7BL..	..	1,089
Chrome Fast Brown TV....	..	2,200
Chrome Fast Violet B....	..	1,100
Chrysamine K .....	..	1,650
Ciba Blue 2BD .....	..	11,550
Ciba Blue 2BD Paste.....	..	5,500
Ciba Scarlet G Pdr.....	..	1,760
Ciba Violet B Pdr.....	..	121
Cibanone Blue 3G Paste....	..	660
Cibanone Orange R Pdr....	..	1,650
Cibanone Yellow R .....	..	220
Cibanone Yellow R Pdr....	..	1,650
Coeruleine Pdr.	150	..
Congo Orange R.....	200	..
Cotton Fast Red 4BSP....	500	..
Crystal Violet Base	20	..
Crystal Violet Ex.....	100	..
Cyananthrol BGA	1,000	..
Cyananthrol BGAOO	1,000	..
Cyanole FF	200	..
Delta Purpurine 5B.....	728	..
Developer B	100	..
Diamine Fast Blue FFB....	1,000	..
Diamine Fast Blue FFG....	1,003	..
Diamine Fast Bordeaux ..	1,003	..
Diamine Fast Bordeaux 6ES	200	..
Diamine Fast Brown GB....	500	..
Diamine Fast Orange EG....	500	..
Diamine Fast Orange ER....	600	..
Diamine Fast Red 8BL....	500	..
Diamine Fast Violet FFR....	501	..
Diazo Brilliant Orange G..	100	..
Diazo Rubine B	100	..
Diazo Scarlet 3BA Ex....	275	..
Diphen Blue RK.....	500	..
Diphenyl Brown 3GNC.....	..	500
Diphenyl Chlorine Yellow		
FF .....	..	400

Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)	Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)
Diphenyl Fast Blue FB			Fast Light Yellow G.....	500	..
Supra .....	..	500	Fast Light Yellow 3G.....	210.	..
Diphenyl Fast Bordeaux B. ..	1,000		Fast Mordant Blue B.....	2,000	..
Diphenyl Red SC.....	1,650		Fast Orange 8186 .....	..	968
Direct Catechine GR.....	550		Fast Orange LG .....	..	968
Direct Sky Blue Conc.....	6,600		Fast Orange R Base.....	440	..
Direct Sky Blue Green			Fast Red G Base.....	2,300	..
Shade Conc.	2,200		Fast Red GL Base.....	1,450	..
Eclipse Brown 3GK.....	6,600		Fast Scarlet G Base.....	440	..
Eosine AG Extra.....	20,000	..	Fast Scarlet R Base.....	450	..
Erio Chrome Azurol B.....	1,900		Fast Violet F	10	..
Erio Chrome Azurol BX... ..	700		Fast Violet Lake F.....	111	..
Erio Chrome Black A.....	24,480		Formic Black TC .....	..	1,000
Erio Chrome Black T.....	19,800		Hansa Yellow G.....	25	..
Erio Chrome Blueblack B.. ..	4,500		Hansa Yellow 5G.....	550	..
Erio Chrome Blueblack BC ..	4,480		Helianthine G .....	..	1,940
Erio Chrome Blueblack G.. ..	3,000		Helindone Brown G Pdr..	100	..
Erio Chrome Blueblack R.. ..	1,000		Helindone Pink AN	500	..
Erio Chrome Red B.....	1,100		Helindone Pink AN Paste..	560	..
Erio Chrome Verdon A....	500		Helindone Pink BN	2,400	..
Eriocyanine A	3,000		Helio Bordeaux BL.....	200	..
Eriocyanine AC	1,000		Helio Fast Violet AL Pdr..	300.	..
Eriocyanine CR	1,000		Hydron Blue G.....	18,000	..
Erio Flavine SX	1,100		Hydron Blue R Pdr.....	25	..
Erio Floxine 6B	1,100		Hydron Olive G Pdr.....	50	..
Erio Floxine 6B Conc.....	200		Indanthrene Black BB Dbl.		
Erio Floxine 2G	1,100		Paste	800	..
Erio Floxine 2G Conc.....	300		Indanthrene Blue GC Paste	40	..
Erioglaucine AC	250		Indanthrene Blue GCD Dbl.		
Erioglaucine Supra	2,250		Paste	2,700	..
Erio Green Cyanine RC....	1,000		Indanthrene Blue GCD Pdr.	100	..
Erio Green Ex. B Supra....	2,000		Indanthrene Blue 3G Dbl..	1,000	..
Erio Rubine 2BC.....	8,000		Indanthrene Blue RS.....	100	..
Erio Violet BC	3,600		Indanthrene Blue RS Dbl..	300	..
Erio Violet RL Supra.....	1,000		Indanthrene Blue RSP....	25	..
Erio Virdine B Supra.....	5,000		Indanthrene Blue WB.....	10	..
Ethyl Violet	300	..	Indan. Brown B Dbl. Paste	500	..
Ethyl Violet Conc. ....	..	..	Indan. Golden Orange G....	45	..
Fast Celosia Lake B.....	55	..	Indan. Golden Orange G Dbl.	2,500	..
Fast Garnet B Base.....	500	..	Indan. Golden Orange R Pst.	500	..
Fast Green Bluish	300	..	Indan. Golden Orange RRT.	4,250	..
Fast Green Extra Bluish... ..	4,480	..			

Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)
Indan. Golden Orange RRT Paste	1,742	..
Indan. Pink B Double.....	400	..
Indan. Red BN Extra.....	500	..
Indan. Red R	500	..
Indan. Red Violet RRN....	25	..
Indan. Violet RN	1,200	..
Indan. Violet RR Ex. Paste	25	..
Indan. Violet 2R Paste....	5,000	..
Indan. Violet RR Ex. Pdr..	25	..
Indan. Violet RRX	20	..
Indan. Yellow G Dbl. Paste	500	..
Ink Blue BITBNOO.....	1,100	..
Ink Blue BJTNO.....	600	..
Jasmine High Conc.....	..	2,025
Kiton Fast Green V.....	..	2,300
Lanasol Orange G.....	..	230
Leather Phosphine PC.....	..	500
Totals	159,443	206,826
<i>(To be concluded.)</i>		

CALCO BOSTON OFFICE IN NEW LOCATION

The Boston office and salesrooms of the Calco Chemical Company were removed on June 1 from 86 Federal Street to 35 Hartford Street.

The new offices are larger and more conveniently located, are fully equipped and stock a full line of their dyestuffs and intermediates for the convenience of the New England trade. Consumers will appreciate the progressive policy that is responsible for this.

DU PONT ANNOUNCES PON- TACYL CLOTH RED 3G

The Dyestuffs Department of E. I. du Pont de Nemours & Co. announces that it is placing on the market the following new product: Pontacyl Cloth Red 3G, which is an acid color of bright yellowish shade extensively used for dyeing loose wool, slubbing, weaving and knitting yarns. This product, as is well known, shows good resistance to light and washing and the fastness properties no doubt will satisfy the demands for ladies' dress goods, fancy goods and knitting trades. It is also used for dyeing cotton back velvets, as it will dye the silk a fiery red, leaving the cotton almos-

unstained. It may be used as an acid color or on a chrome mordant; by the afterchrome process or metachrome. On wool its leveling power is only slight, therefore it will most generally be used in full shades, but with care, level shades can be produced on all classes of goods. Its fastness to acids, alkalis, and storing is good; its resistance to perspiration, hot pressing, and decatizing is very fair.

This product probably will be especially interesting for silk, as it levels well on silk and possesses good fastness to light, also dyeing tin weighted or pure silk full shades of crimson.

NATIONAL ANNOUNCES TWO NEW DYES

Evidence of the continued efforts of the chemists of the National Aniline & Chemical Company, Inc., in behalf of the dyer is shown by the production of two new types, namely, "National" Erie Fast Scarlet 4BA and "National" Wool Orange R Conc. "National" Erie Fast Scarlet 4BA is a direct dyeing cotton scarlet distinguished by its brilliant shade and its fastness to acids and storing. Its excellent solubility and level dyeing properties render it especially valuable for the dyeing of all forms of cotton material in any type of machine. In addition, it is suitable for union dyeing, silk, cotton and silk, artificial silk, paper, jute, straw and chip dyeing.

This dye is also well adapted for the printing of cotton, silk and wool.

Because of its superiority over the common direct reds of the congo and direct red 4B types, this dye will occupy a prominent place in the dyehouse.

"National" Wool Orange R Conc. is an exceptionally soluble acid orange of brilliant reddish tone and is well adapted for a wide range of service on wool and silk. It levels well and possesses good fastness to light.

Both of these colors are noteworthy additions to the already long line of "National" dyes.

N. C. TEXTILE SCHOOL AGAIN QUALIFIES FOR STUDENT MEDAL

The National Association of Cotton Manufacturers offers a medal each year to the various textile schools in America that can fill certain requirements. These requirements are that the textile school have suitable equipment, must have at least fifty students, that the instruction must be of recognized standard, and there must be at least four competitors for the medal.

The Textile Department of the North Carolina State College, which is the textile school of North Carolina, again qualified for this medal, having during the last year 166 students, with a graduating class of eighteen, seventeen in textile manufacturing and one in textile chemistry and dyeing.

The medal was presented by W. S. Lee, vice-president, Southern Power Company, Charlotte, N. C. Mr. Lee is a member of the National Association and also a member of the Board of Trustees of the College.

The medal was awarded to R. C. Hinkle of Lexington, N. C. It is interesting to note that Mr. Hinkle will begin his mill career at the Cliffsdale Mills, Cliffsdale, N. C., under Maurice Hendrick. Mr. Hendrick was the first graduate of this school to be awarded the student medal, in 1908.

Another interesting point about the award of the medal this year is that ten years ago it was awarded to D. R. Hinkle, who is now superintendent of the Cedartown Cotton Export Company, Cedartown, Ga. This is the first time that the medal has ever been awarded to two brothers.

THE INTERDEPENDENCE OF THE DYE AND TEXTILE INDUSTRIES

Being Opening Portions of the Address
Delivered Before the National Association of Cotton Manufacturers'
Convention Held in Boston

By Charles H. Clark
Editor, "Textile World"

(Concluded from last week.)

REVOLUTIONARY EFFECT OF COAL-TAR DISCOVERIES

When Perkin discovered the key that has since been used to unlock the source of beauty, health and death contained in the world's coal deposits he was unaware of the revolutionary effect that it would produce upon the textile industry as he was of the vast store of pharmaceutical products, explosives and gases that he had unloosed. The production and operation of textile machinery had at that time reached a relatively high state of perfection, and mass production of yarns and fabrics was outstripping the machine capacity of the bleaching, dyeing, printing and finishing branches of the industry. The discovery of coal-tar dyes not only revolutionized the dyeing of textiles with this class of colors, but also the preparation and application of natural dyes through its competitive influence, and to no small degree it stimulated the improvement of all textile converting processes.

We are apt to regard the brilliancy and fastness of coal-tar dyes and their most important contribution to the art of dyeing. The shortage of these dyes

during the World War, however, opened the eyes of manufacturers as never before to the value of the exceptional certainty of control in dyeing with coal-tar colors, to the relatively large production that they made possible in machine dyeing, and their relatively low dyeing cost as well as initial cost. These advantages, as previously indicated, are most pronounced in the case of vegetable fibers, but for many shades and processes they are scarcely less important in the dyeing of animal fibers. Certain of the natural dyes occupy an impregnable position in the coloring of silk and wool, and enforced improvements in their application on cotton during the World War materially expanded their field of usefulness.

The natural colors received their first serious jolt when John Lightfoot in 1863 discovered a fast aniline black. The production of artificial alizarine in 1869 by Groabe and Liebermann displaced another important group of vegetable dyes. The discovery of Dr. Baeyer in 1878 of synthetic indigo was an accomplishment next in importance to that of Perkin, but it was not until 1897 that synthetic indigo was produced on a commercial scale, to be followed more or less rapidly by that important group of fast vat dyes. It is these wonderful dyes that make it possible to visualize the time when a complete range of every shade of the fastest possible character will be available for dyeing both vegetable and animal fibers.

ESTIMATED VALUE OF DYED TEXTILES AND DYES USED

And now let us attempt by the aid of rather dry statistics to visualize the part played by color in the textile industry of to-day. The amount of silk that goes into consumption undyed is practically negligible. Excepting for certain mechanical felts very little of the wool annually consumed is not dyed, and a maximum estimate of the proportion of undyed would not be more than 5 per cent of the total in pounds or value. A much larger proportion of cotton than silk and wool has always been used in the gray or bleached state,

and this has been materially increased in recent years by its modern use for so-called mechanical purposes, especially for automobile tires and bagging. As utilized for a large variety of coated materials, such as artificial leathers, rubberized fabrics, etc., the finished products are usually colored and must be so classed. Because these and an enormous yardage of so-called print cloths and convertibles leave the mills in a gray state it is difficult for many manufacturers operating spinning and gray goods mills to realize the extent to which they are dependent for the salability of their fabrics upon the dyestuff industry. While, because of the coarse, heavy character of many of the gray goods used for mechanical purposes, there may be nearly as many pounds of undyed as of dyed cotton produced annually, it may be conservatively estimated that fully 75 per cent of the value of cotton manufacturers produced by domestic mills is dyed before it reaches the consumer.

A 75-75 PROPOSITION

It is unfortunate that the only statistics available for comparative purposes in this connection are those for the year 1914, which is the last year for which United States census figures are available. The fact, however, that the year 1914 was featured by interrupted dye importations as well as by marked depression in the domestic textile business may give us proportional results as reliable as those that may be shown by the 1919 census when that becomes available. Even for 1914 all that we can hope to do is to show the cost of dyes used in the total value of dyed textiles produced the latter figures representing mill values. As a demonstration of the extremely small cost of dyes used in textile manufacture, and of the interdependence of the two industries these figures would seem to be sufficiently conclusive.

The value of cotton, silk and wool goods produced in this country in 1914 aggregated \$1,678,474,906, and 75 per cent of this total, representing the amount of textiles sold ultimately in

the dyed state, aggregated \$1,258,-856,179.

It is reliably estimated that at least 75 per cent of all the dyestuffs imported and manufactured in this country are used by the textile industry, and it is further estimated that the average pre-war value of coal-tar and natural dyestuffs consumed by all domestic industries annually was \$22,500,000. Seventy-five per cent of this total is \$16,-875,000, or a charge of 1.3 per cent against the value of dyed textiles produced.

When estimates show that at least 75 per cent of the products of one industry utilize 75 per cent of the products of another it will be necessary to demonstrate a very large percentage of error in order to prove that the interdependence of these industries is not of an extremely vital character.

(The end.)

NOTTINGHAM LACE AND HOSIERY TRADES

The revival in Nottingham's lace and hosiery trades that was expected to set in with the beginning of the year has not materialized up to the present time. Fully 65 per cent of the lace machines in Nottingham and the surrounding districts are standing idle, and large numbers of operatives are out of employment. There is a fair demand in the home market, although most of the buying is on a very limited scale. Colored laces are chiefly in demand and silk laces and nets are reported to have been selling fairly well. The small quantities of plain nets being disposed of are selling at very low prices. So far as the curtain industry is concerned, business is almost entirely confined to the cheaper grades.

The hosiery trade continues in a somewhat depressed condition. Strikes are reported from several sections, where mill owners have posted notices of a 25 per cent reduction in wages. The owners contend that after making this reduction their employees are getting double the wages they received in pre-war days. In some districts a sliding scale of wages has been temporarily

agreed upon, based on the cost of living. The bulk of the trade now being done relates to the completion of orders which were placed before the slump set in and on which manufacturers have made concessions.

The stoppage in the coal-mining industry which began on April 1 is regarded with some concern by lace and hosiery manufacturers, for if the strike is prolonged, which now seems probable, it will have a very serious effect on Nottingham's staple industries.

CREPON EFFECTS ON ANILINE BLACK AND COLORS

By J. A. WILSON

The revival of this style in Europe and the possible extension to this country may be of interest at this time to the colorist in the print works, and to the chemist in the dye application laboratory of the coal-tar color factory.

In speaking of a revival, I do not wish to assert that this style had died out; far from this, especially in Brazil, Russia, and Germany, as well as England, this style has always been more or less in demand. It is simply an increased demand due to the introduction by the designer and colorist producing new and pleasing combinations in this process.

The crepon effects obtained depend largely on the structure of the goods, weight, and so on, and of course on the care taken in the mechanical manipulation of the goods. The precau-

tions to be taken are so well known that the writer will not deal with this in this short article.

ANILINE BLACK PADDING SOLUTION

- 3 gals. gum water.
- 24 lbs. potassium ferrocyanide.
- 16 lbs. chlorate of potash.
- 64 lbs. aniline salts.
- 36 gals. water.

The slop padding is done in this solution in the usual manner, and the goods semi-dried in the hot flue or in any other way.

The resist colors are printed in the usual way on the machine; the composition of these is as follows:

- 3 lbs. Benzo Sky Blue B.
- 2 gals. boiling water.
- 4½ gals. thickening.
- 20 lbs. acetate of soda.
- 4 lbs. acetate of zinc.
- 2 ozs. caustic soda.

The following coloring matters give excellent results when made up in the above mentioned manner:

Geranine 2B, Bayer, Erie Pink, National Aniline Company.

Heliotrope B, Bayer, Erie Violet B, W, National Aniline Company.

Thazol Yellow, Basel, Niagara Sky Blue.

Diamine Rose BD, Casella, Erie Fast Brown, G, R, National Aniline Company.

Diamine Violet N, Casella.

Benzo Fast Scarlet R, Bayer.

Brilliant Azurine B, Bayer.

Benzo Brown B, Bayer.

The goods are then developed in the usual manner and are then crimped with the following solution:

- 8 gals. gum thickening.
- 8 gals. caustic soda solution 84 Tw.

As mentioned above, the usual precautions to avoid tension and to facilitate shrinkage must be taken from behind the printing machine to washing off and light soaping.

In stiffening and finishing, the pieces are finished partly alkaline, using a little silicate of soda, soluble oil and the necessary finishing materials.—*Fibre & Fabric*.

Dye-a-Grams

Adv. in window: "Take a quart home to the wife and children." But it was only an ice cream parlor adv.!

—O—

Of course, not being from New York and living in the "back woods" may account for the various "blues" we occasionally suffer with!

—O—

One way to keep the worst from happening is to prepare for it. Moral: Always keep a good variety of dyes on hand.

—O—

If a fool is born every minute, it is too bad some method can't be found by which they could be picked out at the time of birth.

—O—

Headline — "Who Paid for the Brooklyn Bridge?" We've done a lot of foolish things in our life, but no one can pin this one on us!

—O—

It may be interesting to those who think that American dyes are not uniform to know that some of the foreign dyes the writer has had submitted to him may properly be described as the "salt of the earth."

G. E. T.



AMERICAN DYESTUFF REPORTER

Vol. VIII, No. 25

June 20, 1921



THIS ISSUE IS THE JUNE
EXPORT NUMBER

"We'll Tell 'The World'—!"

So-Called "Revelations" of New York
Newspaper, While Aimed at Harding
Administration, Confuse Public as to
Dye Protection Issue

**Warning!—Let's "Investi-
gate" Senator King**

Editorials

Foreign Trade Opportunities

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

Vol. 8

New York, June 20, 1921

No. 25

"WE'LL TELL 'THE WORLD'—!"

So-Called "Revelations" of New York Newspaper, While Aimed at Harding Administration, Confuse Public as to Dye Protection Issue

THE New York "World" has recently been working itself up into a state bordering on frenzy over something which may or may not have anything to do with the dye industry. The reason for our uncertainty as to the true meaning of these activities of the "World" arises from the fact that there are some who say that it has attacked the dye industry, and some who say that it hasn't. One finds it, in fact, rather difficult, when viewing it close up, to discover a definite motive behind the hodge-podge of contradictory assertions and queries which grow more vague and bewildering the further one reads; but when the investigator stands off a bit and looks at them sideways, the purpose becomes rather plain.

After the Emergency Tariff bill, including the Knox amendment extending the licensing period for six months more, had been voted upon and passed by the Senate, Senator King offered a resolution calling for a Congressional investigation of lobbying in Washington, and particularly mentioned an investigation of the activities of any persons who have favored or ventured to

advise the passage of legislation designed to furnish our coal-tar industries with adequate protection. No comment was made upon this at the time, but nearly a month later the "World," seeing a chance to make its readers believe that it was annoying the Republicans, built up out of it a day-by-day series of "revelations," phrased in the highly sensational, though meaningless, style best suited to that sort of journalism, running into many thousands of words. The entire production, which appears under the signature of Louis Seibold, Washington correspondent, is patently another of the "World's" many attempts to discredit the Harding administration. The dye industry is merely an incident, for it was the dye feature of the Emergency Tariff bill which produced Senator King's resolution. The industry, or the principles which it advocates, is not really attacked in the series of articles at all, since the arguments of both sides are freely quoted.

As an attack on the Republican party, the Seibold article is not a subject for discussion in THE REPORTER; but because of the fact that in the

course of its "revelations"—which largely consist, by the way, in matter reprinted from the "Congressional Record" and testimony taken at the original hearing of the Ways and Means Committee—there are committed several glaring errors which should not be allowed to pass unnoticed, we take the liberty of bringing these to the attention of such of our readers as have not seen the article in question.

We likewise desire, because of the numerous irrelevancies contained in this article, to cite it as a typical example of what needless damage a careless newspaper of the importance of the "World" can inflict upon any cause, even though, as in the present instance, it is not the desire of the newspaper to attack that cause. Indeed, so unrelated and jumbled are some of the statements about the dye situation that their only effect can be to turn the whole proposition topsy-turvy in the minds of those who may be making a sincere effort to understand what it is that the industry wants and why it wants it.

The representatives of the dye industry believe that if the public can be put in possession of all the facts, sentiment will be in favor of giving it the protection it asks. It aims to present these facts to the country, and is more than willing to have opponents of special protection present theirs. When this has been thoroughly done—if such a thing be possible in the short time remaining before Congress again takes the question up—it realizes that it can do no more and that it must, perforce, abide by the decision of the majority as expressed through representatives in Congress and the Senate. But to have such a carelessly thrown together affair as the "World" article published broadcast, thereby confusing many who were, perhaps, beginning to grasp the subject, and obliterating the results of so much laborious educational work, is distinctly unfair to both sides of the protection argument, and an invasion of their rights which neither can be expected to approve.

For instance, the "World" article is headed: "Emergency Tariff Revealed as Political Claptrap which Threatens

National Scandal." Follows the sub-head: "Investigation by the 'World' Shows Measure to Be a Redemption of an Empty Campaign Promise and Destined to Failure—Seen as a Cloak to Divert Minds of the Farmers It Was to Have Helped from Heavy Tax Burdens." The third paragraph, which follows declarations to the effect that the measure will probably cause a "first-class row" in the ranks of the Republican party, states: "The history of the Emergency Tariff bill, which leading Republicans admit is an utterly impractical as well as a thinly disguised attempt to divert the mind of the suffering agriculturist from taxes imposed upon him, has never been written fully. The details may never be known unless the Senate takes up and adopts the resolution introduced by Senator King (Dem., Utah), providing for an investigation of the circumstances under which the measure was passed."

Then there occurs, immediately following, the two-column heading: "Germans Making Vigorous Fight Against Pre-War Monopoly," and the paragraph: "Sufficient information has been obtained by the 'World' to show that some features of the Emergency Tariff measures are not only objectionable to a large number of Republican leaders in and out of Congress, but that a gigantic combination of German chemical and dye makers and their agents are making a vigorous fight against losing to American rivals the possible monopoly enjoyed by them before the war."

Now, if anybody can show the bearing of these references to the Cartel upon the subject of alleged Republican mistakes or disagreements, he shall be awarded the palm for the standing broad inference record. Picture its effect upon the mind of the earnest man-in-the-street seeking to lay hold of some tangible facts about the dye controversy!

The article continues:

"The 'World's' investigation of the circumstances under which the Emergency Tariff bill was passed has developed the following facts:

"That the chemical and dye feature

of the measure was attached to the Emergency Tariff bill in the face of objections of many influential Republican leaders that it perpetuated the license system adopted as a war measure, violated the traditional high protective policy of the Republican party and placed in the hands of a small group of men control over the domestic manufacture of chemicals and dyes for a prospective period of ten years, during which there is to be an embargo against chemicals and dyes of German manufacture."

These are most certainly not "facts" because, as everyone knows, the bill merely extended for a period of six, and later, three, months the license system, and was designed merely to postpone final action of any sort until the Longworth dye provisions of the Permanent Tariff bill could be brought up for debate. No one made any objections on the ground that it would "perpetuate" licensing, which, according to Mr. Webster, would mean "to make perpetual; to eternize; to cause to endure or to be continued indefinitely"—certainly not a project entertained by the strongest of strong supporters of dye protection under any circumstances, nor contemplated as a possibility by the most active of its opponents.

This "fact" is also "revealed":

"That the Chemical Foundation is conducting an extensive propaganda in the colleges and schools and among business men of the country generally to encourage the study of chemistry and the development of the commercial

manufacture of chemicals and dyes hitherto brought from Germany."

Again, imagine the efforts of the general public to connect that nude, pink fact, "bared" by the "World," according to its headline writer, with the predicted break in the Republican party! This is the sort of thing the dye industry has to face in its attempt to educate the public to an understanding of the relationship between coal-tar chemistry and the national welfare, and the lack of relationship between the industry and the tariff question.

"Emergency Tariff Revealed as Plot" is another heading, while enclosed in a ruled space we find "Dye and Chemical Feature of Emergency Tariff Bill," and under the line "Special to the 'World'" there appears the paragraph: "The licensing feature of the Emergency Tariff bill was the fifth and last title appearing in the measure that passed both Houses of Congress and was signed by the President. It provides:"—Then follows the original Knox amendment calling for *six* months' extension of licensing instead of the *three* which resulted from the conference after the Senate action. While this does not greatly affect the happiness or welfare of anybody, it furnishes excellent evidence of the slipshod manner in which the article was assembled.

It proceeds to give further "revelations" by reprinting portions of Senator Moses' speech made prior to the Senate vote, in which he denounced the "monopoly" which the bill would, he

declared, create in this country. There is also an extract from the collected works of Warren F. Doane, to whom REPORTER readers have already been introduced, a reference to the fact that the American Protective Tariff League passed a resolution against licensing, and a statement from the "American Economist" purporting to show the hand of the "monopoly" in the promulgation of the licensing scheme.

The "World" says:

"The Moses speech encouraged several other Republican Senators to instance their personal opposition to the dyestuffs feature of the Emergency Tariff bill. The extent of this opposition among Republican Senators was never actually determined."

Here is another error. Before the bill itself was voted upon, the Senate voted directly upon the question of whether to reject Subdivision A of Section 501—the very heart of the Knox amendment—and the result was 63 to 25 against rejection, with 8 not voting. The line-up on this vote has already been given in THE REPORTER and will answer the question of the extent of the Republican "opposition" at once. The "World" evidently desires to give the impression that there was, possibly, enough opposition to cause the defeat of the amendment had it not been a "rider," whereas it actually was not a "rider" except in name, for it successfully passed the test of a separate vote by the Senate and came through with flying colors.

It is not our purpose to weary the reader by going further into the "World" article, which is of great length and several installments. The samples given above are typical of the whole. It quotes from the remarks of many people opposed to the licensing plan, but likewise quotes others favoring it. What we wish to draw attention to is the readiness with which a careless newspaper correspondent, aiming at one mark, can hit another with damaging effect. In attacking the Republican administration, Seibold heedlessly constructs his article in such a manner as to convey one erroneous impression after another about the situa-

tion of the dye industry, and this he does at a time when nothing but the facts should be laid before the public. He omits to make clear the temporary character of the legislation enacted by the Senate, using quotations from speeches made more than two years ago against something which has never yet become a fixed law of the land, while at the same time he gives no hint of the fact that the forthcoming Longworth legislation on the dye question does not provide for licensing at all.

And so far as the accuracy of some of his material is concerned, "we'll tell the 'World'" that it would do well to request Mr. Seibold to verify, among other things in future, the *final draft* of a measure before asserting that it has become a law.

FOREIGN DYES LICENSED BY W. T. B. FOR MAY IMPORT (Concluded from last week.)

Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)
TOTALS BROUGHT FORWARD		
FROM LAST WEEK.....	159,443	206,826
Meldola Blue 3R Conc.....	..	660
Methylene Green W.....	..	50
Methylene Heliotrope O		
Conc.	3,000	..
Milling Yellow O.....	50	..
Mimosa Z .....	..	1,100
Mimosa Z Conc.....	..	550
Naphthogene Blue B.....	300	..
Naphthogene Blue R.....	300	..
Naphthogene Blue 4R....	300	..
Naphthogene Pure Blue 4B	50	..
Naphthol AS	6,590	..
Naphthol BS	670	..
Neutral Cloth Blue R....	..	5,000
Neutral Violet O.....	..	10
Nitrosamine Red Paste....	(1 bbl.)	
Omega Chrome Black P		
Dble. Conc.	1,000	..
Omega Chrome Red B.....	..	2,000
Oxam. Copper Blue RRX...	200	..
Oxamine Light Blue GX...	100	..
Oxamine Violet	200	..
Palatine Light Yellow RX	5	..
Patent Blue A.....	1,500	..
Patent Phosphine 5G Conc.	..	1,000
Patent Phosphine M Conc.	..	1,000
Peacock Blue Lake.....	500	..
Polar Red G.....	..	1,000
Polyphenyl Blue NC.....	..	200
Printing Red F.....	220	..

Designation of Dye	Germany (lbs.)	Switzer- land (lbs.)
Protectol I	5,000	..
Pseudo Cumidine	1,000	..
Pyrazol Orange G.....	..	950
Pyrogene Catechine GGO..	..	17,600
Pyrogene Catechine 2GO		
Conc. ....	..	1,542
Pyrogene Direct Blue RL..	2,200	..
Pyrogene Green 3G Conc..	..	17,600
Pyrogene Yellow O Conc..	..	2,200
Rapid Fast Red GL Paste..	660	..
Red for Lake P.....	6,000	..
Rhodamine B Extra.....	..	1,100
Rhodamine B Extra Conc..	..	726
Rhodamine 6G Ex.....	200	..
Rubinole R	25	..
Setoglaucline .....	..	500
Silk Blue BT5BOO.....	500	..
Sulphone Azurine D.....	100	..
Thional Brilliant Green 2G	..	4,000
Thional Yellow G.....	..	3,100
Trisulfon Brown B.....	..	3,300
Ursol Brown 2GA.....	10	..
Ursol Brown 4G.....	10	..
Ursol 4G	100	..
Ursol 4R	200	..
Ursol Gray AL.....	10	..
Ursol Gray B.....	300	..
Ursol Gray G.....	10	..
Ursol Gray R.....	10	..
Ursol SA	450	..
Ursol SLA	10	..
Victoria Blue B Base.....	100	..
Victoria Blue 4R.....	220	..
Victoria Pure Blue BO....	300	..
Wool Blue SR Ex.....	50	..
Wool Green S.....	..	500
Xylene Fast Light Yellow		
2G .....	..	4,000
Xylene Light Yellow 2G...	200	4,300
Xylene Light Yellow R....	..	1,000
GRAND TOTALS	192,093	281,914

ganization. Elaborate plans for the entertainment of the British and Canadian visitors have been made by the American chemists, and there is hope that the bonds between English-speaking chemists may be drawn closer, particularly in view of the efforts Germany is known to be making to regain domination of the chemical industry of the world.

The Society of Chemical Industry of Great Britain is departing from its usual custom this year in crossing the Atlantic to meet in August with the Canadian branch of that organization in Montreal. At the conclusion of the meetings the British and Canadian chemists will start for New York to meet jointly with the American chemists. The deliberations, according to an announcement made by the American Chemical Society, 1 Madison Avenue, of which Dr. Charles H. Herty is director, will give fresh impetus to chemistry on the American continent, where some of the new

(Continued on page 13.)

GIANT CHEMICAL CONCLAVE
HERE IN FALL

Gathering Intended to Strengthen
Ties in Coming Struggle for Su-
premacy in World Industry

The greatest gathering of chemists of Anglo-Saxon countries ever assembled will be brought together at the fall meeting of the American Chemical Society next September, when the Society of Chemical Industry of Great Britain and its Canadian branch will meet jointly in New York with the American or-

AMERICAN DYESTUFF REPORTER

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Pointed solely toward the welfare and growth
 of the American Dyestuff Industry. Unbiased
 contributions appreciated.

A. P. HOWES, President
 LAURANCE T. CLARK, Editor

WARNING!

From The REPORTER of May 30—

"Italy cannot be advised to follow the example thus far set by the United States if she would maintain her own coal-tar chemical independence, but both she and the United States might with great profit follow in the lead of England, which is the only country possessing a real, workmanlike, practical solution to the problem of protecting dye manufacturer and dye consumer at the same time."

From "Commerce Reports" last week—

"According to a cablegram from Secretary F. M. Gunther, Rome, under date of June 10, 1921, the Italian Government will prohibit the importation of synthetic dyes and intermediates except under special license. This prohibition became effective on June 3, 1921."

First we editorially advised England to protect herself, and she did; then we advised Italy to follow England's example and our advice—and lookit! But the United States Government has thus far turned a deaf ear, and we wish to state plainly that if it isn't pretty darn careful from now on, we'll leave it flat to work out its dye destiny as best it may.

We have been Patient, but we Can't Stand Everything!

LET'S "INVESTIGATE"
SENATOR KING

Louis Seibold's "revelations" printed by the New York "World" and referred to elsewhere in this issue, declare among other things that if Senator King's resolution for an investigation of the various lobbies in Washington bears fruit, the resulting committee will want to know more about the proponents of the Knox amendment to the Emergency Tariff bill and of the proposed Longworth measure to be included in the Permanent Tariff bill.

Readers of The REPORTER can tell them this much: That had it not been found that there was a powerful lobby working *against* the original Longworth bill in Washington and against all proposed dye legislation since, the necessity of taking counter-measures would never have occurred to the industry.

Soon after this bill came before the House Ways and Means Committee in 1919 it was seen that there was an organized effort of those bent on playing the Cartel's game to oppose, at every turn and by all available methods, the nation's efforts to protect itself from a recurrence of the embarrassing conditions of 1915 as well as from the possibility of again being at the mercy of any country possessing a self-contained coal-tar chemical industry. It was thought that the need for unusual protective measures was self-evident—and so it was—but when this opposing group arose, it succeeded in making so shrewd a use of parliamentary technicalities that by the time the bill reached the Senate it was able to prevent a vote being taken for more than a year. The result has been that in all the time that dye legislation has been pending, it has never once been brought to a vote which would have determined its final enactment or rejection.

Unable to muster votes enough to defeat the measure in a decisive manner, thereby settling the question and ridding themselves of the perpetual threat of its enactment, the Senators

working in the interests of the organized opposition resorted to that tacit admission of defeat—the filibuster. Would they have done this had they known that a vote would have resulted in the rejection of the measure? It hardly seems likely.

In their extremity, they have called into play every political device and parliamentary trick known to the game, among these being that tried and trusted standby, the cry of organized “interests” working to pass the bill. The reason for the effectiveness of this device lies in our national prosperity to believe that wherever the word “organization” is cried aloud in a certain tone, there must be underhand work going on somewhere. The public does not stop to investigate or reason such things out; it has no time, anyway. It has just time enough to read such parts of the daily newspapers as interest it. The opponents of dye protection knew this—knew that the “interests” which they themselves served were about to

lose their pet object, namely, the prevention of adequate protection for the dye industry, and in desperation they raised the cry of “special interests.” How well they succeeded in preventing a final vote on this necessary legislation, is now history.

Of course, the proponents of protection are working together! Organized “interests” are working *for* this measure, and organized “interests” are working *against* it. What of that? Is it not customary? The only question which should interest the public is the question of possible illegal methods, and you may set it down that if there is any good reason for investigating the activities of those engaged in working for the passage of the new Longworth bill, beyond a doubt there is also good reason for investigating the coterie inspiring Senators King, Moses and others. By all means let us know the truth!

As a matter of fact the efforts of the dye people are nothing more than

the entirely natural result of the strongly entrenched organization working directly against their legitimate interests and the interests of the United States. Members of that organization, for their part, are entitled to disagree with this view and to maintain that they know best. That is one of the principles upon which this country was founded, and hence, viewing the controversy impartially, it is merely a question of letting the two sides argue it out on the general theory that the truth is mighty and will prevail. But there need be no cries of "chicanery," while the argument is being developed to its conclusion, merely because two groups are united against each other.

There is no trade to-day unorganized to speak for itself, and organization for the protection of common interests is the recognized right of any industry, provided the operations of such organizations are aboveboard. The dye trade has its own perfectly legitimate organization. The REPORTER has reached concerted action from the very outset, realizing full well that organization was needed to fight organization. The dye trade organized itself the better to tell the public and Congress about its views, and when unexpected forces arrayed themselves against it, the united efforts of the industry were turned toward its defense.

If the time has come for investigations, then by all means let's investigate Senator King and some of the others who have been working industriously to bring about the defeat of legislation which the Cartel desires above all things to see defeated. We don't imagine that such an investigation would reveal anything of moment. But it would at least make everyone, Senator King included, very, very happy, and would serve to clear the atmosphere by the time the Senate has a chance to vote on the Longworth selective embargo.

This last, being an improvement over the licensing system and probably the most effective and workable

plan for protecting the dye industry which can be devised, should furnish a real test of the patriotism of all members of both Houses when it is presented for approval. Those who cannot then bury party jealousies and petty precedents beneath a larger desire to do something really big for the country, cannot be classed as "100 per cent Americans."

GIANT CHEMICAL CONCLAVE HERE IN FALL

(Continued from page 9.)

chemical industries promise to rival the older German organizations.

The functions arranged for the British chemists will begin immediately upon their arrival the latter part of August. After visiting Montreal the delegates will cross the border on the afternoon of Labor Day when they will be met by a committee and conducted through the industrial plants on this side of Niagara Falls. They will be entertained at dinner in Buffalo and leave on a special train, arriving the following morning in Syracuse. There they will have an opportunity to inspect the Solvay Process Company plant. The party will proceed to Albany and travel by night boat to New York.

They will be welcomed there the next day by members of the American Section of the Society of Chemical Industry, who will be their hosts at luncheon, and elaborate plans are being made for the reception of the visiting chemists. The details of their entertainment are being worked out by a committee of which Dr. B. C. Hesse is chairman, and Dr. Allen Rogers, secretary.

The first formal introduction of American, British and Canadian chemists is to be effected at a lawn party on the afternoon of September 7 on the College Green at Columbia University. Among the societies asked to participate are the American Electrochemical Society, American Institute of Chemical Engineers, American section of the Societe Chemie Industrielle, and the Manufacturing Chemists' Association

of the United States. On the evening of September 7 the visitors will be invited to a smoker and entertainment. Announcing the plans for further entertainment, the American Chemical Society said:

"Scientific sessions of the American Chemical Society, in which many vital matters concerning chemical research and applied chemistry will be discussed, are to be held at Columbia University, its official headquarters. To all these meetings the British and Canadian guests have been bidden. They will also be present at the banquet of the American Chemical Society on the evening of September 9 at its hotel headquarters, the Waldorf-Astoria.

"The fortnight beginning September 12 will be dedicated to American chemistry in all its phases, for it marks the holding of the National Exposition of Chemical Industries, which is to be held in the Coast Artillery Armory in the Bronx. There will be brought together under one roof a remarkable demonstration of what has been accomplished in this country since the European War in adapting the resources of the United States to the national needs."

The Modern-Central Silk Finishing Company are having plans drawn by Architect John C. Van Vlandren, 140 Market, Street, Newark, N. J., for the construction of a new dyeing plant to be located on Jersey Street, that city. The structure will be of one story, dimensions 100 by 150 feet. Mr. Hess, of the Modern-Central concern, states that the architect has been authorized to take estimates at once for bids on general contract for the construction which will cost, it is estimate, approxi-

mately \$40,000. The concern is at present located at 18 Market Street.

SEVENTH TEXTILE SHOW, IN BOSTON, WILL BE THE LARGEST EVER

The largest exhibition of textile machinery the world has ever seen will open on October 31 and continue for one week in Mechanics Building, Boston.

This is the seventh exhibition held by the Textile Exhibitors' Association. The extent of the service performed for the industry by an occasional exhibition of this kind is shown by the gradual growth from the show of 1907 in Philadelphia to the enormous exhibition now being prepared for Boston.

There will be over 350 separate exhibits, including the power department, and over 125,000 square feet of floor space will be devoted to the show. It will occupy the entire Mechanics Building, including the beautiful Paul Revere Hall, which will be devoted to the exhibition of the finished products.

Practically every variety of cotton machinery will be displayed, together with considerable woolen and knitting machinery and a large variety of mill supplies and power machinery.

It is an educational opportunity that can be duplicated in no other way, even if the manufacturer could afford the time and money necessary to visit the large number of widely scattered mills in each of which some of the important things grouped together in Boston might be seen.

In conjunction with the exhibition many conventions will be held, among the most important being that of the

National Association of Cotton Manufacturers.

The officers of the Textile Exhibitors' Association are: President, E. F. Hathaway; vice-president, F. J. Hale; treasurer and secretary, Chester I. Campbell.

The exhibition, as in previous years, is under the personal direction of Chester I. Campbell, 5 Park Square, Boston.

DU PONT PLACES FOUR NEW COLORS IN MARKET

The Dyestuffs Department of E. I. du Pont de Nemours & Company announces four new colors which it is placing upon the market. These include Pontamine Light Yellow 5GX, Pontacyl Sulphon Blue 5R Conc., Pontachrome Brown MW Powder and Pontacyl Black 4BX.

Pontamine Light Yellow 5GX is a very greenish yellow which before the war found extensive use on cotton for self-shades of very bright yellows and for bright greens in combination with Sky Blue. It is distinguished by its excellent fastness to light and washing, particularly when after-treated. It is also recommended particularly for fast-to-light shades on artificial silk; and, somewhat, for silk also. An important point is that the dyeings can be discharged to a good white with Rongalite. On union material in a neutral bath with Glauber's Salt, the wool is colored very much redder than the cotton. As was always the case with this product, as sold pre-war, it is necessary to use sodium phosphate in the dye bath and to take particular precautions that the dyestuff be completely dissolved before entering the goods. A similar product is Benzo Fast Yellow 5GL, sold pre-war.

Pontacyl Sulphon Blue 5R Conc. is a very high concentration of Sulphon Cyanine 5R Extra, and in quality is the equal of the same of pre-war importation. The qualities of this product are so well understood as to make classification unnecessary here.

Pontachrome Brown MW Powder corresponds in shade and strength with the company's former Ponta-

chrome Brown MW Paste, which is now offered in powder form to avoid the difficulties experienced in using the paste. This has been done for the reason that most dyers prefer this product in the powder form.

Pontacyl Black 4BX is an acid black similar in properties to Naphthylamine Black 4BX largely used before the war and well known to practically all dyers.

FOREIGN TRADE OPPORTUNITIES

Names and addresses of any of the firms mentioned below may be obtained by direct application to the U. S. Bureau of Foreign and Domestic Commerce, which compiled the list, or any of its district and co-operative offices. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers. Applications for particulars should refer to opportunity numbers; and in case information is desired regarding more than one, inquiries should be made on separate sheets.

34981—A mercantile company in India desires to secure the representation of firms for the sale of hardware, stationery, *aniline dyes*, etc. Reference.

—O—

34972—A commercial agent in Greece desires to be placed in communication with exporters for the sale of colonial products, food supplies, *textiles*, etc. Reference.

—O—

34903—A commission merchant in Honduras desires to secure an agency for the sale of general lines of *cotton goods*, clothing, hardware, shoes, etc. Reference.

—O—

34833—A merchant in India desires to secure an agency for the sale of *cotton goods*, sundries, *hosiery*, hardware, etc. Quotations should be given c. i. f. Indian port. References.

—O—

34904—A manufacturing company in Poland desires to secure *raw cotton* to weave for American firms. Monthly

requirements to be 50 kilograms. Correspondence should be in Polish, German, or Russian. Reference.

—o—

34845—A merchant in Baluchistan desires to secure the representation of manufacturers of perfumery and toilet requisites, *laces, lingerie* and embroidery, fancy goods, *colors, dyes*, patented medicines, and rubber toys. No reference offered.

—o—

35016—A merchant in France wants to secure an agency for the sale of *jute, wool, cotton, and hemp textiles*, fats, and coal. Quotations should be given c. i. f. French port. Payment to be made against documents upon arrival of goods. References.

—o—

34938—A producer of mohair in South Africa desires to receive from American manufacturers catalogues, descriptive literature, and estimates of the cost of installing a *complete plant* for the *spinning and weaving of mohair*.

—o—

34828—A merchant in Czechoslovakia desires to purchase and secure an agency for all kinds of rubber goods, rubber coats and dresses, rubber shoes and heels; leather boots, shoes, top and sole leather, shoe heels, etc.; all kinds of *knit goods, especially light underwear*; foodstuffs of all kinds, and canned goods; cosmetic articles, powders, creams, and toilet waters; sanitary supplies; and *machine oils for textile mills*. References.

—o—

34851—A mercantile firm in India desires to import *cotton and woolen textile goods*, umbrellas, sponges, dusters, buttons, and notions, hardware, tools, wire netting, trunks, lamps, glassware, and crockery; leather goods, boots and shoes; toilet requisites, soaps, and perfumery; automobiles and bicycles; metal goods and metals; coal tar, oils, tallow, paints and varnishes; *cotton mill and gin stores*; chemicals and paper. References.

—o—

35028—A trading company in India

desires to secure an agency for the sale of *heavy chemicals, colors, aniline dyes, sizing materials, cotton spinning and weaving machinery* and supplies, paper, yarn, rope, leather belting, cotton gin and railway stores, old newspapers, red lead, camphor, peppermint, lumber, metals such as mild steel bars, plates, angles, and beams; galvanized plain and corrugated iron sheets, tin plate, brass and beams; sheets and rods, motor cars and motor cycles and parts; *cotton piece goods, woolsens, felts, velvets*, second-hand clothing, and boots and shoes. References.

—o—

34983—The representative of a group of manufacturers in China is in the United States and desires to form direct connections with manufacturers of *machinery* for flour, paper, *cotton, and silk-spinning mills*, machine works, mining and electric power plants, transmission equipment, telephone equipment, locomotives and railway appliances, motor cars and trucks, structural steel, galvanized sheets and wires, tin plate, hardware, paints, building materials, leather, *chemicals, and dyestuffs*. Quotations should be given f. o. b. American port. Payment: Cash against documents. Catalogues, price lists, and full information are requested. Reference.

The Bradford Dyers' Association, Ltd., in a circular issued to their customers announcing a reduction of 10 per cent in the prices of dyeing certain classes of goods, says: "We have been

assured by many of our customers that a reduction in dyeing prices would materially assist in re-establishing trade, and we have, therefore, after giving the matter serious consideration, decided to reduce our prices. We wish to make it perfectly clear that our costs do not justify us in making any reductions whatsoever, and that we are acting purely in the interests of the trade, and in anticipation of a reduction in production costs."

MANY NEW FIRMS WANT SPACE IN CHEMICAL SHOW

Every State in the Union will be represented at the Seventh National Exposition of Chemical Industries, which will be held in the Eighth Coast Artillery Armory, Jerome Avenue and Kingsbridge Road, New York City, during the week of September 12. This is assured by the early list of those that have already secured space, and from the outlook the display this year will be far more important than its predecessors. One phase of the situation that is giving Managers Fred W. Payne and Charles F. Roth no little difficulty is finding room for the many new concerns that want to exhibit. Already more than 400 applications for space have been made, and there is no doubt but that last year's record of 457 exhibitors will be eclipsed.

No exposition held in the country has the scope of the chemical display. Other exhibits show the value of one certain industry, but the chemical field embraces every industry in the country. In fact, there is not one that at some stage of its business does not call on the wizardry of the chemist for aid, and as the experiments in chemistry are revealing new wonders all the time the annual exposition is held for the purpose of showing to manufacturers and the public alike the progress that has been made. The vast resources of the United States are never fully realized until one has paid a visit to the chemical exposition, for the North, South, East and West place on view the results of vast re-

search and development. Canada is also a big exhibitor at the American Chemical Exposition, for chemists of the Dominion realize the value of the display.

This year's exposition will be more international in aspect than any of the six preceding it for the reason that it will follow immediately after the convocations of chemists from all parts of the world that will be held in New York City early in September. To these meetings will come experts from England, Canada, South and Central America and possibly from other European countries and they will stay for the exhibition in the armory. More than 50,000 persons interested in chemistry are expected to visit New York City during exposition week.

Those who knew the American chemical industry before the war, marvel at its growth, and to make a comparison it is only necessary to cite the first exposition held in 1915 with its 83 exhibitors, against the display in Grand Central Palace last year with its total of 457 exhibitors. This wonderful growth has been accomplished entirely by the skill and ingenuity of the American chemist, who, when the country was thrown on its own resources by the war, stepped in and made such a success that America has taken the lead in chemistry.

The educational value of the exposition is its principal feature. To manufacturers and business men the display is invaluable for with the majority of exhibits tending along the lines of progress and economy it is evident that knowledge and impressions not possible elsewhere can be gained. In many cases a view of the inside of the chemical industry has brought improved conditions in many manufacturing plants and with the wide range of exhibits there is not a single industry that is not touched upon in some manner.

There will be the usual program of symposiums and moving pictures, and these will be held for the first time in a hall with facilities that will give adequate seating capacity. In the armory there is an auditorium built like a the-

ater that will accommodate 1,400 persons, and the arrangements are such that the symposiums and pictures will be held under comfortable conditions.

NECESSARY RESTRAINTS IN DYEING OF WORSTED COATINGS

WHAT THE DYER CAN MATCH

In one way or another, on one fiber or another, it is possible for the dyer to produce practically the whole range of color; that is, so far as matt surfaces can display color. The purity and intensity of the spectrum colors is not possible. Nor can the life and sparkle of gems and some metallic surfaces be equaled. But anything in nature that is fairly comparable—the colors of flower petals, say—can be matched by the dyer.

This may sound a bold statement to make, but there must not be too much read into it. It must not be taken to mean, for instance, that you can take any sort of textile material to a dyer, along with, say, a pelargonium petal, and challenge him to match it. But take the petal and let the dyer choose his own textile and he will do it. Otherwise some cantankerous person might present a dyer with a piece of jute sacking and call him incompetent if he did not metamorphose it to the color of a wild-rose leaf—oh, the dyer has some cantankerous people to deal with!

Nor must the statement be taken to mean that when the dyer has produced his match to any color brought to him it will necessarily be fast to light and washing and milling and chlorine and perspiration and hot ironing, and have all the rest of the wonderful properties that people expect of dyed material. Because it won't.

We can imagine one of the persons just referred to bringing a violet to be matched, and if even he could not grumble at the shade produced he would probably say it was a bad match because it did not smell as

sweet—oh, the dyer has some can—but we said that before.

LIMITATIONS OF DYEING

Yes, our statement, though true, has unfortunately in practice many limitations. Not all dyes are applicable to all fibers. If a certain effect is produced on one fiber it is not necessarily possible to reproduce it on any other fiber. The most serious limitation, however, lies in the fact that many effects have poor permanence—they do not last long under the conditions in which they have to be used. When we can produce all shades on all fibers to stand all tests we shall be getting near perfection.

It is because we are such a long way from this that there is such tremendous scope for research. The boundary line between possibilities and impossibilities varies in every branch of the trade. It is along this line where firms in the stress of competition are fighting the battle of progress, ever trying to push the limitations back. Experimental work beyond this line is all to the good. But our present object is to point out that bulk work ought not to be turned out except, so to speak, inside the boundary of limitations. Every branch of the textile trade could provide material for an article on this aspect of it. We must therefore now proceed from the general to the particular, keeping in view one branch only, and one feature only, namely, worsted coatings and their fastness to light.

It is a most unfortunate fact that the brightest dyes are the most fugitive to light. We might call this a rule but that there does not seem any inherent necessity for the phenomenon. The law of chance may say that if a dye is superior in one quality the odds are against its being superior in every other quality. But this is only a negative proof, and may be countered by looking at the question another way.

There is nothing theoretically impossible except a contradiction in terms, and we doubt if anyone could give a compelling argument to prove that no dye could be discovered which will be as bright as the brightest known, and at the same time as fast as the fastest known. In fact, why should there not be dyes in nature's hitherto undiscovered store which shall prove to be at once brighter and faster than anything known? We have, however, to deal with facts as they are, and what is the rule at present proves to be a very awkward thing for many branches of the trade.

LIMITATIONS REGARDING LIGHT

Fastness to light of different dyes varies so much that they can easily be put into four or five categories. The standard of fastness to light required by different goods also varies greatly. Some trades can employ dyes in all five categories. The decision as to which dye to use is in these trades governed

by other considerations than mere fastness to light. For some shades cheapness will be the deciding factor. But in the case of the brightest shades the brightest dyes only can be used, and in these lucky branches of the trade, these brightest dyes can be used, even though they are in the "most fugitive" category.

Other trades may be able to use four out of five categories; others three, and some only two or one. But it is almost certain that any branch using less than the full number will have a constant temptation to employ dyes in the forbidden categories because the more fugitive dyes will have brighter shades than the fast dyes.

The desire and demand for variety, spurred on by the stress of competition, causes these unfortunately situated branches of the dyeing trade to attempt to use dyes which they can only employ at the risk, shall we put it, of burning their fingers, turning out work which will have only a very brief career of satisfaction followed by an aftermath of great dissatisfaction, discredit, and perhaps monetary loss, owing to claims and loss of prestige.

WORSTED COATINGS—A SPECIAL CASE

The worsted coating trade is, in this respect, one of the unfortunates. Botany worsteds are the highest class of goods for men's wear. They are also subject to severe conditions as regards exposure to light and weather. For both these reasons they ought to be dyed with the very fastest colors.

An additional reason is in the fact that English worsted coatings have hitherto maintained an unchallenged supremacy. We believe it can truthfully be said that whatever other nations have done in other branches of the textile trade they have not yet got anywhere near us in worsted coatings. Our best products can pass the highest tariff barriers—because there is nothing on the other side to touch them. It behooves us therefore to at least keep up one standard of excellence, and, if possible, improve on it.—*Fosselt's Textile Journal*.



AMERICAN DYESTUFF REPORTER

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Italian Government Acts to Protect Domestic Dye Industry

By Raffaele Sansone

AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

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No. 26

PRODUCERS, PUBLICITY—AND PUGILISM

Big Title Bout Shows What Carefully "Built-Up"
Interest Can Do—Advertising the Logical Business Weapon

JUDGING from the magnitude of the purse which will go to the principals in the Franco-American fracas at Jersey City this week-end, it would seem that the present year, in very truth, is living nobly up to the oft-repeated prediction that "1921 Will Reward Fighters."

There are some whose gruesome imaginations lead them to believe that the forthcoming ring encounter will consist solely of a sickening thud and an autopsy, or at the very least a feint and a faint; while others—a minority—have expectations of several dazzling, whirlwind displays of pugilistic pyrotechnics, to be followed, possibly, by a wild celebration on the part of the entire population of the French Republic. Many are asserting confidently that the demoniac Dempsey will jar the very buildings along the Champs Elysees loose from their foundations, and that all Gaul will be divided into many more than three parts, when he "lands" on the gallant and graceful Gallic gamecock; yet a lesser number maintain with apparently equal confidence that M. Descamps' protege will deliver some-

thing analogous to a charge of TNT under the jaw (pronounced "chawr") of Mr. Kearns' amiable ward. And so it goes, but whether Jack knocks Georges for a row of planets, as the sporting-page Homers express it, or Georges sends Jack hurtling upward and outward clear into the five-dollar seats, it's all in a lifetime, and the one real certainty is that both young men will come into possession of snug fortunes as a result of their mere willingness to do battle.

But the creators of the popular and inspiring slogan mentioned in the opening paragraph did not, we fancy, have particularly in mind the gladiators of the roped arena when they launched it upon a discouraged world, however well the latter class of reward-seekers may have reason for believing in its efficacy. Those whom they wanted to influence were, first and last, big and little business men all over the country.

In the world of business, serious competition means fighting—or receivership. And in the kind of fighting which business competition produces, carefully considered and logically

placed advertising is probably the most effective single weapon at the command of the fighter.

Everyone knows what conditions were during the business boom, the "flush times" which followed the war. Still better does everyone know how he felt when the "buyers' strike" settled like a blight over this fair land. The Distribution Department of the U. S. Chamber of Commerce knew, too, and proceeded to include the following query as a feature of the questionnaire sent out to determine what it might be that manufacturers, retailers and wholesalers were doing to cut overhead expenses as a means of meeting the demand for lower prices:

"What have you done to reduce your publicity to a normal basis?"

It is significant that only a quarter of those answering said that they had cut down on advertising space, while many in the remaining three-quarters considered depression a justification for an increased use of advertising. Any business man should be interested in some of these replies:

"We have taken no steps to reduce our advertising space, as *it is our feeling that it is false economy to cut down advertising at a time when business is in need of a stimulant to keep it alive.*"

"We are economizing in space and size of issues, but not pruning as to number of or kind of channels."

"*We do not feel that we should decrease publicity; if any change, it should be increased.*"

"Have increased our advertising expenditures to increase our business."

"Use more mediums but smaller space with equal results. *Space does not count; pounding away all the time is what tells.*"

"It is our idea that cutting the advertising would only increase the cost of selling merchandise, and we believe we are right."

"We have rather added to advertising, as this has always been our custom—*advertise heavily when business is hard, and 'go easy' when it is coming anyway.*"

"We feel that there is greater sales resistance, particularly on our products, at this time than before, and in consequence we are taking aggressive action in the matter of space and direct-by-mail efforts."

"*We kept our appropriation down to bedrock during the days when there was practically no sales resistance, conserving our funds for a time when they would stand us in good stead.* We feel we now owe it to our distributors and dealers, and to ourselves, to help keep things moving as satisfactorily as possible by securing the healthy flow of distribution produced through consistent, well-directed and forceful publicity."

A famous newspaper paragrapher—we think it was Franklin P. Adams—said the articles on the Dempsey-Carpentier match led him to wonder whether so much was written because public interest was so great, or public interest was so great because so much was written. And several gentlemen of the press proclaimed the latter view correct.

They were right. The match has plenty of direct competition in the sporting world; it has still sterner and equally direct competition as a general news item. Long before these lines were written the training activities of the fighters had become a front-page affair for many of our newspapers. Watch the front ages two or three days before the fight—and on the morning of the fight. Unquestionably, at least half to two-thirds of the public interest necessitating so prominent a display as you will see, has resulted from the amount of space arbitrarily accorded this event at intervals over the past year and continuously during the past two months. It furnishes, ready-made, to any who care to analyze it, one of the day's most striking examples of the cumulative effect of a carefully "built-up" interest. Had the newspapers dismissed it with a mere paragraph a day, and had confined that paragraph exclusively to the sporting page, Promoter Rickard would never in this wide world have felt himself justified in taking the

chance of increasing the original 50,000 seats to more than 90,000.

What did it? Steady, calculated publicity—reams, yards and oceans of it. Even in the New York-and-vicinity newspapers it has received a sum total of space greater than any one of our most recent and celebrated divorce stories, while as national news items these others never had a chance with it. The dye provision of the Emergency tariff bill simply isn't "in it." Yet, if one-quarter of the newspaper space arbitrarily assigned to the fight stories and been reserved for the Longworth measure, it would at this time, when the House and Senate debates over it are drawing near, be necessary for editors to insist that their Washington correspondents send them something which they could print under a two-column heading on the front page *every day* until the issue is settled—for public interest in it would be fully as great, and far more permanent, than in the fight. Postpone the fight for two months, meanwhile stopping all reference to it in the newspapers, and the rapidity with which interest would wane would astonish all except advertising men, Promoter Rickard, and the two managers, who know the game too well to expect anything else.

The same holds true in any business. It can be demonstrated mathematically or experimentally, or any old way you please, that, all other things being equal, the surest means of getting the "edge" over your competitor is by using better advertising copy than he does—

likewise more often and more of it.

When there is less merchandise than the amount required by consumers, so that producers right and left are booked months ahead and cancelling orders, there can be no real competition, and all the advertising in the world cannot increase the number of sales.

But just as soon as the quantity of merchandise becomes greater than the consuming power of the buyers, in that moment producers come into competition with each other and *someone* has got to run on part time, shut down, or see stock accumulate which he cannot sell and which represents capital tied up with the chances for ultimate dividends dwindling day by day. That is the time to remember that advertising was designed primarily as a weapon for overcoming competition.

Having considered this, it may now be permissible to ask: Which is the logical time to reduce advertising appropriations—depression or boom?

The reader may answer for himself—in words of one syllable!

H. A. METZ CO. IS OFFERING SPECIAL COLORS FOR SILK THROWSTERS

From time to time silk-dyeing establishments, dyeing skein or piece goods, are troubled by colors which have been used by throwsters for marking their relative stocks, which do not boil out. Consequently, where light shades are required the amount of color remaining on the fiber causes

the dyer a great deal of annoyance. H. A. Metz & Co. have worked out a line of colors said to eliminate all these troubles, which are being used very successfully by many throwsters. They will submit product samples and prices to any throwsters interested in these colors.

PARIS DYE FIRM INCREASING CAPITAL

Intending to increase its capital from 71,000,000 to 79,000,000 francs, the Compagnie Nationale de Matieres Colorantes of Paris is seeking permission from the Government to make certain alterations in the articles of association. Endeavors are also being made to standardize the names of dyes in France with a view to eliminating the drawback that very often the same dyes are placed on the market under different names. The Union for the Development of the Dye Industry in France has, with the assistance of the associated manufacturers, issued its official Register of Dyes containing precise designations for about 260 dyes now placed upon the market.

NATIONAL ANNOUNCES NIAGARA BLUE R AND NIAGARA BLUE R CONC.

The National Aniline & Chemical Company, Inc., announces the production of a new direct blue under the name of Niagara Blue R, which for the convenience of the trade is offered in two concentrations. This product will be found very useful for the production of certain effects not obtainable with the blues now on the market.

Niagara Blue R dyes bright reddish blue shades of moderate fastness to light, washing and alkali. It is distinguished by its excellent exhausting properties, being suitable for application even in a cold bath. This property makes it of distinct value for padding and jig-dyeing processes. An after-treatment with formaldehyde or copper sulphate renders the shade somewhat redder and improves the fastness considerably. After-

treated with copper sulphate, Niagara Blue R is suitable for better grades of material to which the fastest direct colors are ordinarily applied.

Diazotization and development with beta-naphthol yields indigo blue shades of good fastness to washing, rain water and cross-dyeing. So applied, Niagara Blue R is suitable for the production of indigo blues to replace the use of sulphur blues for the dyeing of goods to be subsequently rubberized where freedom from metallic salts is essential.

Niagara Blue R is suitable for union dyeing. It dyes wool and silk much weaker and somewhat redder shades than cotton. Its very clear discharge will render it of considerable value to the printing trade. Other uses for which Niagara Blue R is recommended are the dyeing of paper, leather, wood chip and allied materials.

NEW DYEING AND FINISHING MACHINES

The Riverside Engineering Company, of Paterson, N. J., has just completed the construction of newly perfected machines for dyeing and finishing all qualities of silk and silk-mixed goods, designed after the idea of Claudius Ugnon, expert finisher, and Charles Saldarino, expert consulting mechanic. The two experimented to a high degree the manipulation of goods in process of dyeing and finishing, and the construction of machines of this kind.

Claudius Ugnon, having more than forty years of practical experience as a textile finisher with some of the largest dyeing and finishing concerns of France, Germany and the United States, has applied to the above new machines all the perfections necessary, and applied them in some of the largest dyeing and finishing establishments, where Mr. Ugnon was at that time finisher, foreman and manager.

Charles Saldarino, with a practical experience of more than twenty years as head mechanic in some of the largest machine shops of Italy and the United States, where he was called

upon for advice, has applied to these machines all his experience to obtain a perfect machine.

The company's specialties are:

1. The Palmer Substitute.—A machine possessing advantages for stretching and obtaining a good hand to the texture and for the conservation of the back of the goods without any glossy or shiny marks, which is a large factor of saving on the labor.

2. The New Three-Roll Quetch.—One of compensation type and is arranged in a manner to humidify the texture evenly and without leaving too much of the liquor in the goods, which permits finishing heavy goods exceedingly fast either on the Palmer or on the entering frame or any other drying or finishing machines, without finish spots.

3. The Drying Machine.—This machine, like the two previous ones, is equally constructed along the improved ideas. It can be depended on to do good work; the simplicity of its mechanism eliminates any experimenting and it is very simple to operate. The production obtained in this machine will surpass many other drying machines. It is constructed in two different models—(1) for drying two pieces of goods at one time and (2) for drying three pieces of goods at one time. As the goods are run through this machine they are not subjected to any tension whatever, but simply carried through, which permits of retaining all the crepe in Georgettes and crepe-de-Chine, and thus obtaining that much desired pebble. This machine is sold with a guarantee to deliver 125 to 150 yards per minute for the second type running three pieces of goods at one time and 100 yards per minute for the first type machine running two pieces at one time.

The Chamber of Commerce, Wilmington, Del., has been exhibiting a complete model of a modern dyemaking plant in the lobby of the Hotel du Pont. The display is arranged under the supervision of the National Research Bureau, Washington, D. C.

CENSUS BUREAU PREPARING NATURAL DYE CENSUS

A preliminary statement of the 1920 census of manufactures with reference to the manufacture of natural dyestuffs and extracts has been prepared by the Bureau of the Census, Department of Commerce. It consists of a detailed statement of the quantities and values of the principal products manufactured during the year 1919.

The figures are based on returns from 145 establishments with products for the year valued at \$54,063,000. At the census of 1914 there were 112 establishments with products valued at \$20,620,300, an increase of \$33,442,700, or 162 per cent. In addition, natural dyestuffs and extracts were manufactured in 1919 by 32 establishments engaged primarily in the manufacture of other products to the amount of \$3,170,000 and in 1914 by 21 establishments to the amount of \$762,400.

The total production of natural dye
(Concluded on page 15.)

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A. P. HOWES, President
LAURANCE T. CLARK, Editor

TIME FOR ANOTHER DECLARATION OF INDEPENDENCE

President Harding, on May 28, signed the Emergency Tariff bill, which became effective immediately and gave to a number of industries protection calculated to see them safely through the period which must elapse before House and Senate can enact permanent and more carefully thought out legislation. This measure was never touted as the most "scientific" tariff which could be devised, nor does it express the matured and settled policies of the Republican party which are to prevail during the coming administration; in short, it is universally recognized as nothing more than a temporary makeshift, applied with the same thought as that of one giving first-aid in applying a tourniquet while awaiting the arrival of the surgeon to put in the stitches—certainly nothing to make such a fearful stew about as some have done who apparently believe the die has been cast and will lie as it fell on May 28 for four years or more.

Realizing this, it is only natural to wonder what Congress, as a whole, could have been thinking of when it showed such unjust discrimination against one of the most important industries mentioned in the entire measure, the American dye industry. Why should this industry be singled out among all others to have its time cut in half? The Emergency Tariff bill was framed on the assumption that it would take Congress nearly six months to enact the permanent

measure. If it is right that other industries should receive the benefit of whatever doubt may exist in their cases, why is it wrong to do the same for the dye industry?

The sheer absurdity of that last-minute change which resulted from the joint House and Senate conference is more apparent in view of the latest developments in the situation of the Permanent Tariff bill. Although Congress will shortly be placed on a "summer schedule," which means that there will be frequent three-day recesses under agreement that no important business shall be transacted until fiscal legislation is ready, the various sub-committees will remain at work, and the belief now is that the bill will come out of committee late this week, so that active debate in the House can begin after July 4. This is expected to occupy about two weeks—but it may take longer; meanwhile, Senator Penrose declares that when the bill reaches the Senate, his own committee will have need to keep it "one or two months," since supplemental hearings are to be held. The special session of Congress, he said further, would not adjourn until both fiscal measures—tariff and taxation—were enacted, which might be the last of October.

Three months from May 28 will be August 28, and on this day the temporary protection granted the dye industry expires. No one, even the most hopeful, believes that the tariff measure can be enacted before that time, which drives us to the inevitable conclusion that the dye industry will be exposed to the German attack while Congress, like Nero, fiddles. Allowing it the six months granted the other industries would have carried it well past the time when our Solons had said their final say. Reason totters when the ordinary mortal tries to discover the logic of such a move. What is the matter with the Republican majority, anyway? Just because there are one or two fanatics in the ranks, why should other members of the party allow themselves to

accept dictation contrary to their sentiments as expressed by the vote on Senator King's motion to reject the first half of Title V of the Emergency Tariff?

One hundred and forty-five years ago the first Continental Congress adopted the Declaration of Independence—and proceeded to back up its action with powder and ball and the innate gameness of a lot of half-fed, half-clothed, half-drilled farmers and clerks. Senator Henry Cabot Lodge describes those days very interestingly in his book on the American Revolution, and most of our Senators and Congressmen, we take it, have at one time or another studied American history, for no campaign is complete without some reference to George Washington, General and President.

What beats us, then, is how so many men, all filling positions in a body descended directly from that declaration-making Congress, all exposed to the traditions of those stirring times, can dawdle childishly for

twenty-five months over a measure which has almost as much to do with our future independence as did the document to which John Hancock signed his name so prominently. Life in general may have been more simple then, and one's duties clearer, but it is absurd to think that the situation of the original Congress could have been otherwise than far more complex than that of the present one. The political ancestors of our present-day Solons were not even dead sure that all the colonies would stick together and support them. But they reasoned simply and directly, reached their conclusion as to the proper thing to do—and then did it! It required moral and political courage of the highest sort, for they stood a very good chance of being hanged for their pains.

Picture what a threat of the gallows would do to our Congress today! Demoralization isn't the word! It is sad to reflect upon, and it may sound unnecessarily pessimistic, but

what can one conclude after witnessing the antics of a group of men so afraid of their political hides that they hesitate to adopt any course at all? Politics, expediency—those appear to be the national watchwords of to-day. No other explanation can account for those twenty-five months of beating about the bush, with the question still as far from a definite settlement as ever. Times have changed, we know, but a little reflection upon traditions of the past would be about the most healthful thing that Congress could do. It has "advanced" too far.

Without a self-sustaining coal-tar

chemical industry, no nation to-day can be economically independent. Moreover, it will not be independent even in name after some other nation, with the foresight to provide for itself, gets through with it.

The time is auspicious for Congress to make another declaration of independence. It can declare itself independent of the petty party jealousies and picayune politics which have been slowly submerging it. And then it can declare this nation again truly independent of its neighbors by enacting legislation which will adequately protect our coal-tar chemical industry.

Italian Government Acts to Protect Domestic Dye Industry

May Sees Further Decrease in Production—Competition of Reparation Colors Keenly Felt—Lack of Adequate Plant Lessens Benefits of Measure—Opportunities for American Firms

By RAFFAELE SANSONE

Genoa, June 6.
Special to The REPORTER.

May was a very serious month for the Italian dyestuff industry, many of the works having to reduce further their production. There was a loss in foreign exports due to a further rise in the value of the Italian lira, as well as the usual strong competition in the home market in Italian Government war reparation products and in products imported direct from Germany. After repeated meetings arranged by the Minister of Industry at Rome, the Italian Government decided to place a strong importation duty on foreign dyestuffs that can be produced in Italy, and on others the production of which it is wished to encourage. So far, no importation duty whatever has been placed on natural dyestuffs, as Italy has always been in great need of them. For this reason the new measure is meeting strong resistance on the part of the consumers, and es-

pecially on the part of those in the textile industry.

The new duty will, of course, be of more benefit to the Italian Government than to that of the Italian dye industry, since the latter, even when foreign products could be obtained with great difficulty and at very high prices, could not undertake the manufacture of colors other than the sulphur colors and a few acid, basic and direct coloring matters, and will scarcely be able to do so at present even if encouraged by protective measures.

The placing of the importation tax will favor those foreign firms which intend to transport into Italy itself their manufacturing operations, and there is no doubt that the new law, if preserving for the time being the national industry, will later be the means of permitting the creation in Italy of foreign firms such as the Manufacture Lyonnaise de Matieres Colorantes and other French firms

which before the war were branches of German firms. American firms might benefit from the situation, sending over the raw materials in large quantities and producing certain colors on a very large scale, exporting what they cannot place in Italy itself.

Some effort will certainly be accomplished later for extending the number of coloring matters produced and increasing their manufacture, as several Italian chemists are being trained to manufacture dyes at the Mulhouse school of dyeing. The local conditions, however, combined with the difficulty of finding the proper workpeople, the comparatively small amount of capital invested, expensive raw material, and better or-

increased in 1915, when Italy entered in the field against Austria. In 1916, 1917 and 1918 no German exports could be made, but if the increase in the exports from other countries be noticed it will be seen that these were increased considerably, being brought from 75.5 tons to 2,203.1 tons. After 1918, the war being ended, the dye exports from Germany started with 221.5 tons in 1919 and reached 1898.4 tons in 1920. Besides the figures indicated for 1920, 350.6 tons of dyestuffs were delivered by Germany on account of war reparations.

With the increase of the German products during the last two years (1919 and 1920) it will be noticed that the imports of colors from other coun-

	1913	1914	1915	1916	1917	1918	1919	1920
Germany	4,719.2	4,077.7	781.4	....	....	....	221.5	1,898.4
England	278.0	204.0	238.5	1,955.0	679.3	2,815.7	687.6	413.0
Switzerland	554.0	599.8	836.1	539.8	622.4	849.1	863.9	811.8
United States ....	....	....	....	1,406.1	2,308.0	4,354.2	101.1	319.7
Other countries ..	104.4	110.1	64.4	75.5	419.0	2,203.1	88.4	131.4
Totals	5,655.6	4,991.6	1,920.4	3,976.4	4,028.7	10,222.1	1,962.5	3,574.3

ganization of the American and English firms already on the market, will, however, only allow a domestic development much below the requirements of the country.

Importance of Aniline Dye Market.—For considering the importance of the Italian coal-tar dye market, it will be useful to consider in this article the different imports of colors from 1913 to the end of 1920. These are indicated, in tons, in table given above.

The table shows how the German exportations of dyestuffs reached 4,719.2 tons in 1913, being reduced in 1914 and

tries not named fell from 2,208.6 tons in 1918 to 88.4 tons in 1919, and to 131.4 tons in 1920. American and English coal tar exportations to Italy reached their highest development in 1918, falling after this more in the case of the United States than in the case of England, which was able to keep certain ground in Italy. As will be seen, United States exports recovered slightly in 1920. Switzerland, for some reason or other, could not increase its exports much, keeping these, after an increase and reduction, in 1918 definitely between 800 and 900 tons, with little

change in the following years owing to the special agreement between Switzerland and Italy.

The above table also shows another very important fact, and this is that the consumption of dyes that reached a total of 5,655.6 tons in 1913, fell after this, reaching only 1,920.4 tons in 1915. In 1916 a strong recovery took place, however, due to larger deliveries of American and English dyestuffs and to the great need of dyeing very large quantities of woolen fabrics at once for the army and navy, reaching, in 1918, 10,222.1 tons. The war being finished, however, the Italian dyeworks were obliged to return to their pre-war productions, and here found a great change. The buying public, which up to the end of 1914 had bought colored goods with the greatest liberality, owing to their great cheapness, finding prices enormously increased, reduced their purchases; and the industry, not finding a market for its goods, suffered very severely, being compelled to reduce its purchases of dyestuffs during 1919 to the small total of 1,962.5 tons. In 1920 a slight recovery in the production of colored goods having been possible, owing also to the export prohibitions having been eliminated, a certain recovery was possible, bringing the total importations of dyestuffs to 3,924.9 tons, comprising the war reparation products. This is, however, still much below the 5,655.6 tons per year required before the war.

The above table should be of encouragement to overseas exporters of dyestuffs, and especially to those of the United States; for it shows that their exportations to Italy increased during 1920 despite German competition. The table also proves, however, that the exports from Germany were much above the quantity of the war reparation dyestuffs delivered, being five times more, and that this country is gaining ground rapidly in Italy, having only to double her present exports in order to regain her former monopoly.

Foreign Exchange.—The foreign exchange rate fell during May, the United States dollar being reduced to 17.60

lire from 20 lire; the English pound sterling to 71.90 lire from 80.57 lire; the French franc to 1.60 lire, instead of 1.65 lire; the Belgium franc from 1.60 lire to 1.57 lire; the Swiss franc to 3.20 lire from 3.60 lire, and the German mark to 0.30 lire from 0.33 lire. Such conditions brought on, as a natural consequence, a certain reduction in some of the prices owing to the increased value of the Italian lira.

Some of the current prices for dyestuffs were as follows per kilo at the end of May: Naphthol yellow, 50 to 70 lire; Auramine, 70 to 80 lire; Orange II, 30 to 35 lire; Nigrosine, water soluble, 30 to 40 lire; Nigrosine, soluble in alcohol, 35 to 40 lire; Sulphur black, 7 to 10 lire; Acid black, 35 to 40 lire; Direct black, 35 to 40 lire; Chrome black, 40 to 45 lire; Methylene blue, 80 to 100 lire; Direct blue, 25 to 30 lire; Sulphur blue, 45 to 50 lire; Malachite green, 80 to 100 lire; Acid green, 60 to 70 lire; Direct green, 50 to 70 lire; Bismarck brown, 40 to 50 lire; Fuchsine (Magenta) crystals, 70 to 80 lire; Eosine, 60 to 80 lire; Ponceaux, 35 to 45 lire; Methyl violet, 70 to 80 lire.

The general elections and the great reduction in the price of dyed goods, made necessary by the strong reduction in demand, as well as a considerable accumulation of stocks, distracted many textile people from extending their production and many consumers from increasing their purchases, and rendering the workpeople more nervous and restless, the latter being prone to go out on strike for the least reason. This further reduced the orders for dyestuffs.

In order to dispose of a certain portion of imported and reparation dyestuffs, and to make as much money as possible while prices remain high, a commercial agreement was arranged with the Czecho-Slovak Republic by which a yearly exportation of the same amounting to 600 tons, will take place from Italy.

Mordants, Assistants, Dyehouse and Print Works Products.—There was a further reduction in all the prices of mordants, assistants and dyehouse and

print works products. Some of the quotations were as follows at the end of May: Citric acid, crystals, 2,300 to 2,350 lire; oxalic acid, crystals, 1,000 to 1,050 lire; tartaric acid, crystals, 1,300 to 1,350 lire; alum, 200 to 210 lire; bichromate of potash, crystals, 1,000 lire; bichromate of soda, crystals, 950 lire; carbonate of soda, powder, 98 per cent, 70 to 75 lire; chlorate of potash, 538 lire; chloride of ammonia, 400 lire; bleaching powder, 100 to 130 lire; yellow prussiate of soda, 800 lire; silicate of soda 140 deg. Tw., 170 lire; caustic soda, 70/72 per cent, 210 to 220 lire; caustic soda, 76/78 per cent, 220 to 230 lire; formic acid, 80/85 per cent, 600 lire; hydrochloric acid, 20-21 deg. Be., 45 lire; tannic acid, 60 per cent, 2,000 lire; hydrogen peroxide, 10/12 volumes, 180 lire; acetate of alumina, 125 lire; basic acetate of copper, 900 lire; acetate of lead, 480 lire; chrome alum, 375 lire; ammonia, 22 deg. Be., 120 lire; stannous chloride, 1,600 lire; zinc chloride, 48 deg. Be., 160 lire; yellow dextrine, 300 lire; white dextrine, 300 lire; farina (potato starch), 240 to 250 lire; glycerine, 28 deg. Be., 600 lire; glucose, 45 deg. Be., 370 lire; nitrite of soda, 96/98 per cent, 525 lire; saponification oleine, 350 lire; aniline oil, 99 per cent, 1,400 lire; industrial castor oil, 500 lire; permanganate of potash, 1,400 lire; aniline salt, 1,200 lire; sulphide of soda, 60/65 per cent, 250 lire; tartar emetic 43/44 per cent, 2,250 lire per 100 kilos.

NATURAL DYESTUFF CENSUS

(Concluded from page 9.)

stuffs in 1919 as reported by all manufacturing establishments was valued at \$4,689,000, as compared with \$1,862,200 in 1914, and the total production of tanning materials was valued at \$32,625,300 in 1919, as compared with a production of \$7,898,700 in 1914. In addition, the establishments reported the manufacture of mordants to the value of \$1,218,700, assistants valued at \$2,845,300, and sizes to the amount of \$11,580,500.

BLACKS FOR SILK WANTED FOR FALL TRADE

From all reports received from silk men it is obvious that black is the most wanted of all colors at the present time, according to "Textile World." To many members of the trade this is a decidedly favorable trend for the demand to take, since they argue that almost all silks will dye up a good black. One of the largest sellers in the market speaks as follows: "Blacks are and will be the most popular color for fall. I will venture to say that the call for black silks is three times the demand for all other colors combined."

THE FINISHING OF COTTON GOODS

By JOHN W. CLARK

[Abstract of an address before the Southern Textile Association]

In its broadest sense, finishing covers the fields of bleaching, dyeing, printing, mercerizing, starching, etc. In this instance, however, the committee on finishing is instructed to deal only with the last named and the necessary machinery connected with same. Other committees I understand have already been appointed to take up the other phases of this subject.

Woven fabrics after leaving the loom are subjected to various treatments, depending upon the structure of the fabric and the future use to which it is intended that it be put. The vari-

ous processes are usually separated as follows:

1. Rendering the surface of the fabric clear. By shearing and singeing machines.

2. Rendering the surface of the fabric woolly. By raising and napping machinery.

3. Loosening the threads, at the same time softening and filling the material. By steaming, shrinking, moistening and dipping in hygroscopic substances.

4. Widening and lengthening the fabrics. By stenters and stretching machines.

5. Producing brilliant, glazed, satine effects. By cylinders, calendars, mangles, beetling machines, etc.

6. Thickening or giving body to the material. By passing through a bath containing gumming, sizing, starching material.

7. The fixing of designs in relief by glazing, embossing, watering, and other special processes.

The finishing of cotton goods is in a large measure a physical or mechanical process. It nevertheless calls for a considerable knowledge of the material used. Without such knowledge the process can be expected to continue successfully only so long as the conditions remain normal. Under such circumstances an unexpected variation in the material might readily cause the breakdown of the process. In many cases faults in the finished goods can be traced directly to an insufficient knowledge of the material used. Frequently this is brought about by putting materials in the same mixing capable of reacting with each other. It is the aim of every finisher to produce uniform results. It is not easy, however, to produce results that are unvarying. Those of you who have studied artillery conduct of fire doubtless remember the definition for probable error, which is "That amount of error, which in a large number of instances, will be more often exceeded than not." In other words, the probable error table tells the percentage of shots that will fall within a certain area at a certain range; provided the personnel, material

and ammunition are up to the standard. So it is with finishing, after the organization has been perfected and the equipment and supplies are found to be up to a standard, a certain amount of variation can still be looked for. The amount of variation to be expected under the most favorable conditions can be determined only by experienced and close observation.

Starch dressing imparts a stiffness and grip to a fabric which improves and completes it. The finishing process also improves the appearance of the fabric, making it more salable and at the same time better enabling it to withstand shop wear. Finishing has not yet and probably never will be reduced to an exact science. There are many more formulas for finishing and kinds of finishes than there are kinds of fabrics. This is not only due to the different uses to which the same fabrics are put, but it is also due in many cases to the customer having been educated up to believe in a certain finish. With the same fabric one customer will prefer a piece of goods with one finish and another with another finish. Frequently by flattening threads, filling up interstices and adding stiffening material loose fabrics are made to appear firm and solid. In some instances by the aid of such treatment goods are made to appear better than they really are. This is especially true as regards the heavily filled goods put out by the English finishers for export to the Orient and South American countries. In many cases such treatment is very necessary in order to produce fabrics that are cheap enough to meet the demands of the trade. The cheaper grades of window hollands and bag goods may be taken as an example of this.

To a buyer a finish should show off the real quality of the goods. Finishing is really a process of beautifying and improving. Sometimes it is done by mechanical treatment alone but in most instances it is done in conjunction with such materials as are suitable for developing smoothness and gloss. The degree of luster obtained depends upon:

- (1) The material of which the calendar

rolls are made; (2) the pressure to which the fabric is subjected; (3) the amount of friction between the rolls; (4) the constituents of the dressing with which the fabric has been treated. The materials used for starch dressing are usually divided as follows:

1. Stiffening and binding materials. These include such starches as corn, potato, wheat, rice, tapioca, casava, sago, and other specially prepared starches. Also flour, dextrine, Irish moss, gums, glue, magnesium sulphate, sodium sulphate, etc.

2. Filling material, China clay, talc, blanc fixe, alum, etc.

3. Conditioning agents. Tallow, soap, glycerine, cocoanut oil, soluble oil, stearine, waxes, etc.

4. Antiseptics. Carbolic acid, boric acid, salicylic acid, chloride of zinc, formaldehyde, etc.

5. Bluing materials. Aniline dyes, Prussian blue, Smalt blue, ultramarine.

Diligence should be a cardinal virtue of the finisher. Details must not be entrusted too much to others. Goods are turned out by finishing machinery at a rapid rate and a constant check should be kept upon same. If quality, quantity and cost are not up to standard, it should be known where and why. Quality should be given first consideration. At the same time all unnecessary waste should be avoided. The last mixings made up in the afternoon should contain just enough dressing to finish the day's run so that as little as possible will be left over at stopping time. If this matter is not given careful oversight it can easily result in a considerable loss. The finisher is a larger user of steam. A close watch should be kept upon the coal pile to see that it does not diminish too rapidly. It should be seen to that the drying is efficiently done. To do this it is very necessary that all condensed steam be trapped away from the drying units as fast as it collects. It is also important that the saturated moist air above the drying unit be kept removed. It is a matter of common knowledge that clothes hung on a line on a windy day will dry much more rapidly than on a

still day even at lower temperature. Much heat can readily be lost through radiation. For this reason it is well to see that all pipes are kept covered at all times with asbestos covering. The waste of power through shafting and machinery not being properly aligned, the waste of lubricants through careless handling, and the breakage of machinery parts through carelessness and indifference, calls for attention. Last but not least the loss due to inefficient labor and too large a labor turnover should be given careful consideration. The amount of work a man should do on each job should be carefully determined within reasonable limits. Then if possible the person placed in the position should be one whose physical and mental make-up fit him for the work he has to do. Each operative should then be required to do a full day's work. With a definite task to perform within limits there should not be the same tendency to rush unduly and turn out inferior work, as is sometimes the case with piece work. For this reason in many instances task work is preferable to piece work.

It is folly to imagine that human energy can compete economically with mechanical energy. There are places in the industry where this seems to have not yet been discovered. We usually speak of energy in terms of horsepower. One horse-power is equal to 33,000 foot pounds. In other words, it is equivalent to the amount of work required to raise 100 pounds 330 feet in one minute. A mechanical horse-power can be bought for about \$25 per year. To purchase the human energy required to do the same amount of work would cost, it has been carefully estimated, over \$50,000 per year.

In bygone ages it was customary to describe things unknown or mysterious as undiscoverable as the sources of the Nile. The sources of the river Nile have now long since been traced out and are well known. Stains, spots and discolorations are sources of annoyance to the finisher. In a carelessly run plant their sources are many. They are all discoverable, however, if the necessary

efforts are put forth. The seconds made each day should be gone over and separated and the blame for same properly placed. Dirt is one of the finisher's greatest enemies, especially where bleached goods are being handled. Too much stress cannot be laid on the importance of keeping the machinery and surroundings clean. Any cloth which is left for any length of time, whether in bins, boxes or rolled on batches, should be carefully covered up to protect it. Oiling, if carelessly done, can readily become another source of trouble. Where every one is allowed to handle oil cans it can be expected that spots and streaks of oil will find their way into the goods. Drip pans should always be kept under all hangers to catch any oil that might drip from the bearings. Rust stains are another source of common occurrence in some plants. Frequently they are caused by iron in the water supply, also rust inside the kiers and sweat from machinery and rusty pipes. There are other stains which the finisher sometimes meets with, such as lime stains and ash stains, also stains due to insufficient bottoming. These mostly come from the kier. Although not a common occurrence, mildew stains are sometimes known to cause trouble. To be on the safe side it is always well for the finisher to use a small amount of some good antiseptic to prevent the possibility of these stains.

The cloth cannot be too carefully graded and inspected before it leaves the manufacturer. The manufacturer

who sends goods of a second quality to the converter and expects him to turn them out as firsts is in my opinion making a grievous mistake. If there are weaving imperfections in the goods when the converter receives them, you can depend upon it that they will be defective when he has finished them. If the buyer who receives the defective goods reports to the manufacturer that he has received them he is lucky. If he does not take the trouble to advise him, but instead places his order with some other concern the quality of whose goods he can depend upon, then in my opinion, he is out of luck, or worse still, out of a repeat order that should have been his.

NOTES OF THE TRADE

Under the laws of New York the Mutual Fur Dyeing Company, Inc., has been incorporated. The capital is \$10,000 and headquarters will be in Brooklyn.

With a capital of \$5,000 the Glendale Silk Dyeing Corporation has been incorporated under the laws of New York. Headquarters will be located in Queens, and the incorporators are H. Krausse, M. J. Maurer and O. Barthel.

The A. A. Shuford Mill Company of Hickory, N. C., has under contemplation the erection of additional mill buildings here to take care of expanding business. Plans will soon be drawn up and it is expected that definite action will be taken on the project at once. The plant is running sixty hours a week.

Announcement has been made by the Klauder-Weldon Dyeing Machine Company to the effect that this firm has moved into its new and more spacious plant and general offices at Bethayres, Pa., where it is prepared to take care of customers' requirements in dyeing, bleaching and scouring machinery.

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